

(No Model.)

2 Sheets—Sheet 1.

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HAND PROPELLER FOR BOATS.

No. 410,365.

Patented Sept. 3, 1889.

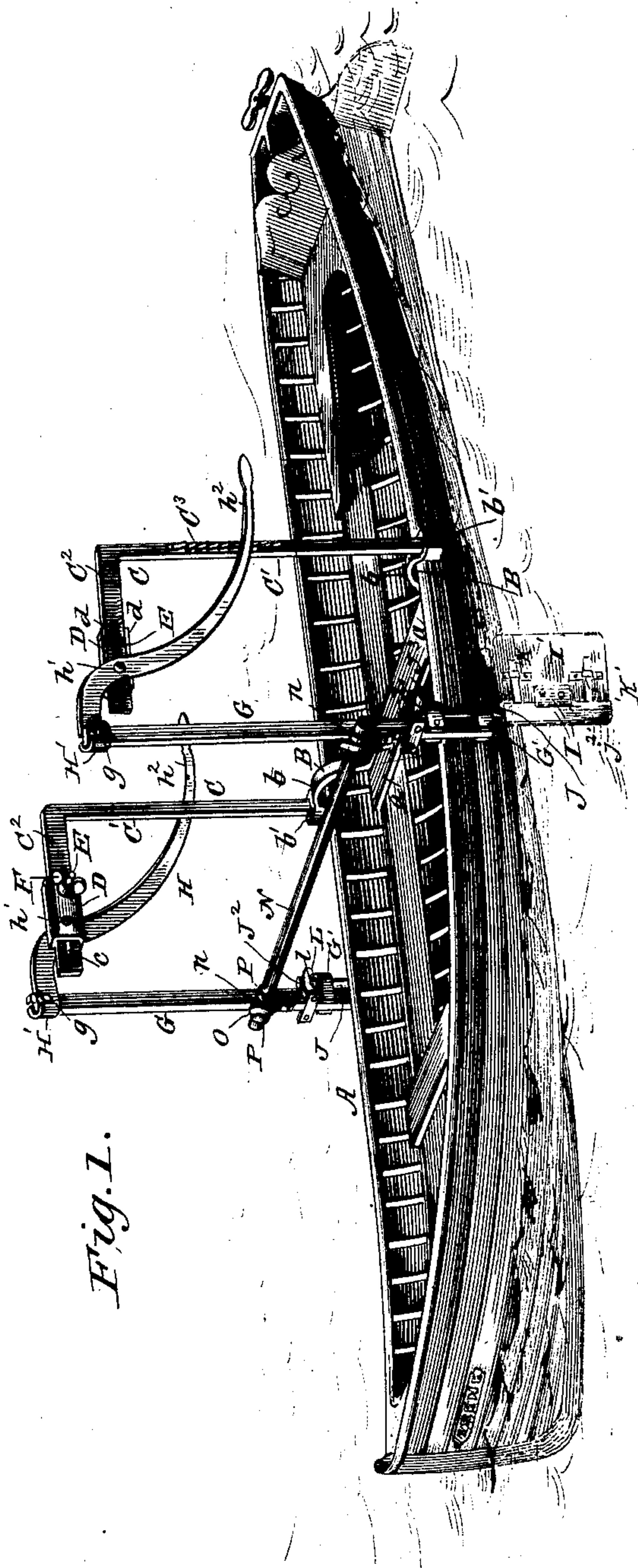


Fig. 1.

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BY *Munn & Co.*

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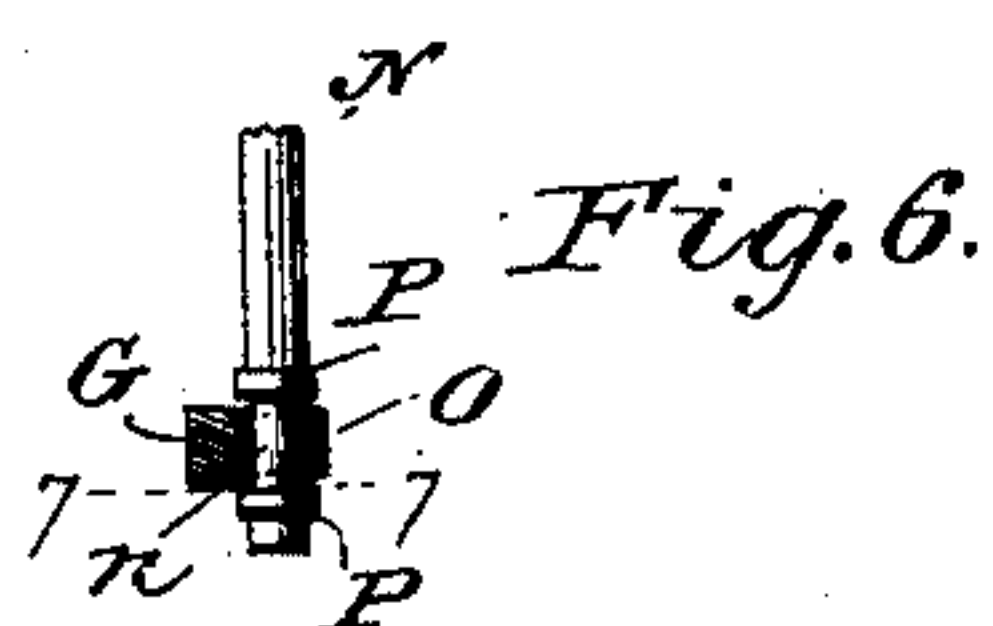
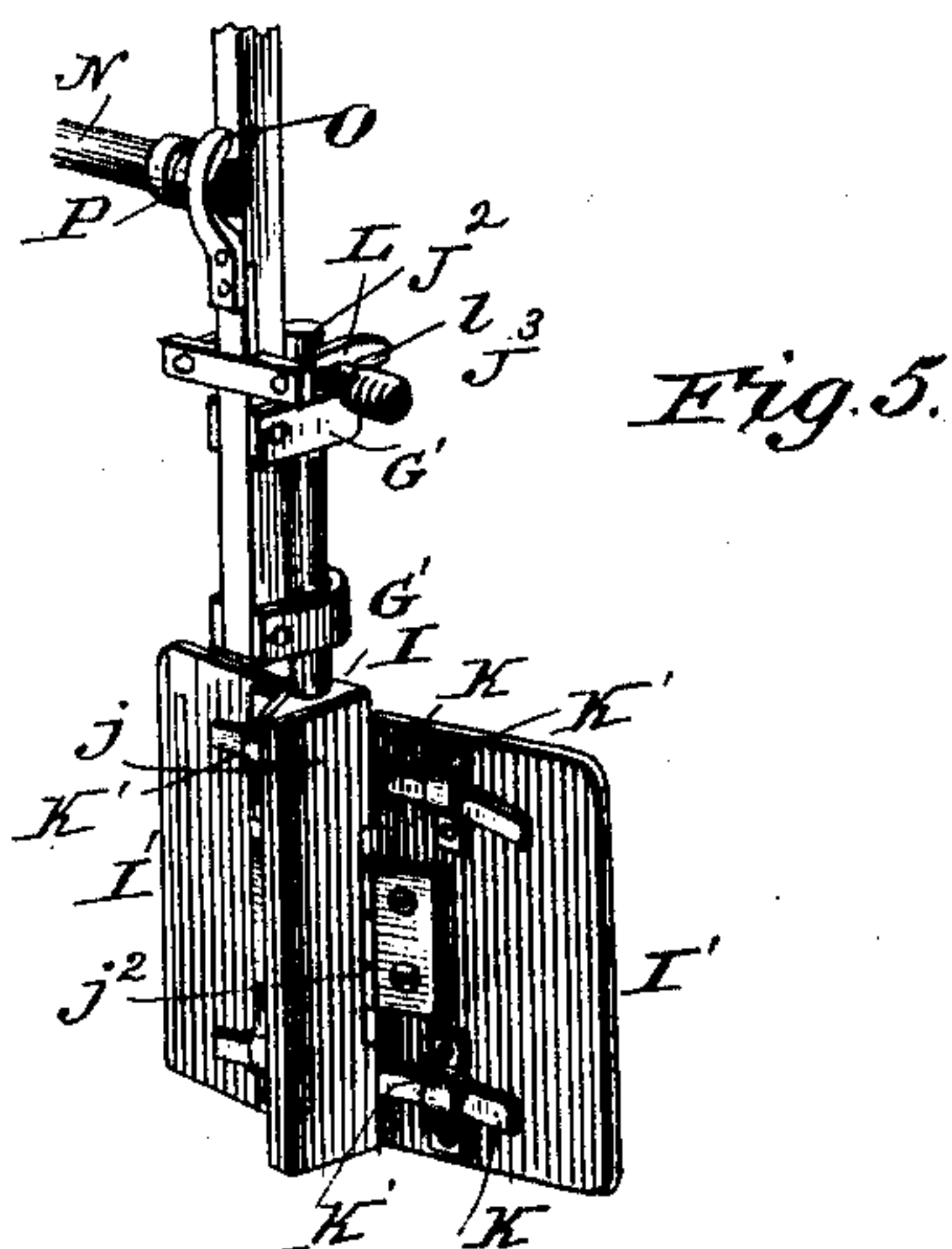
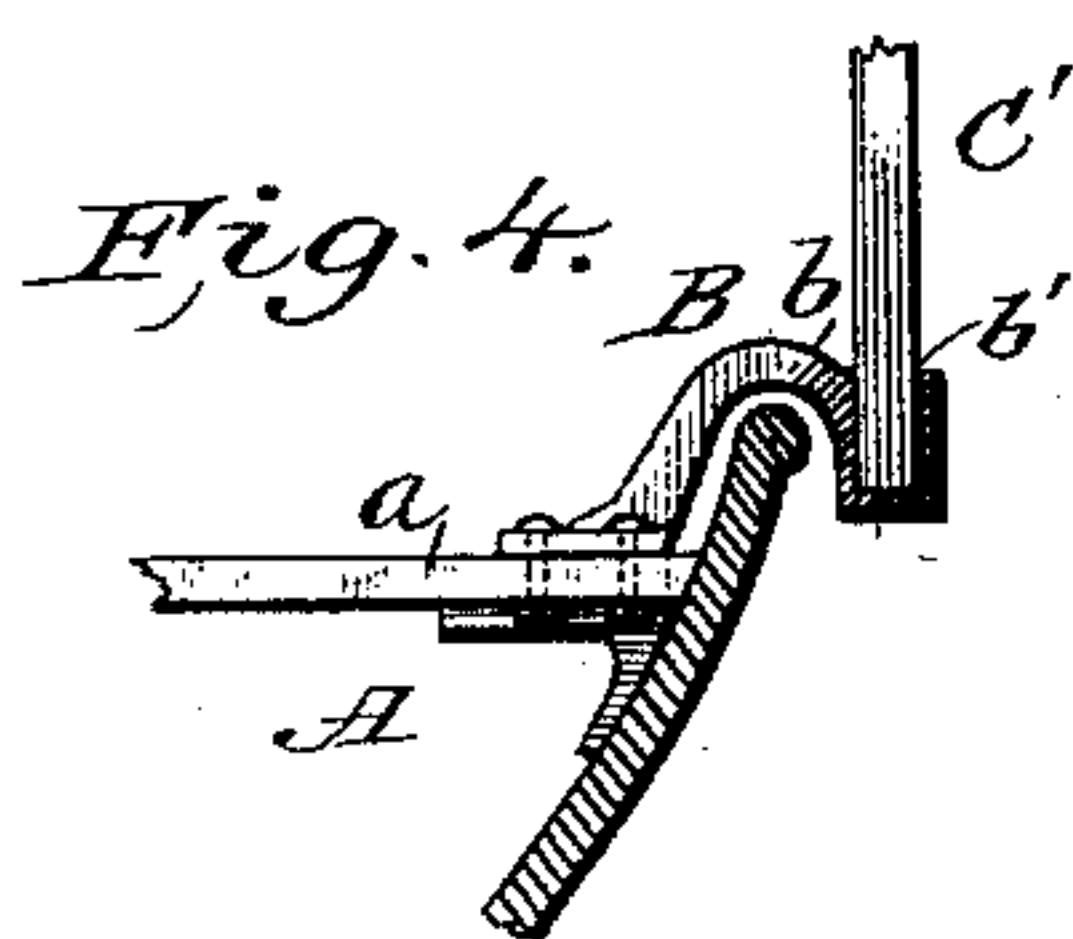
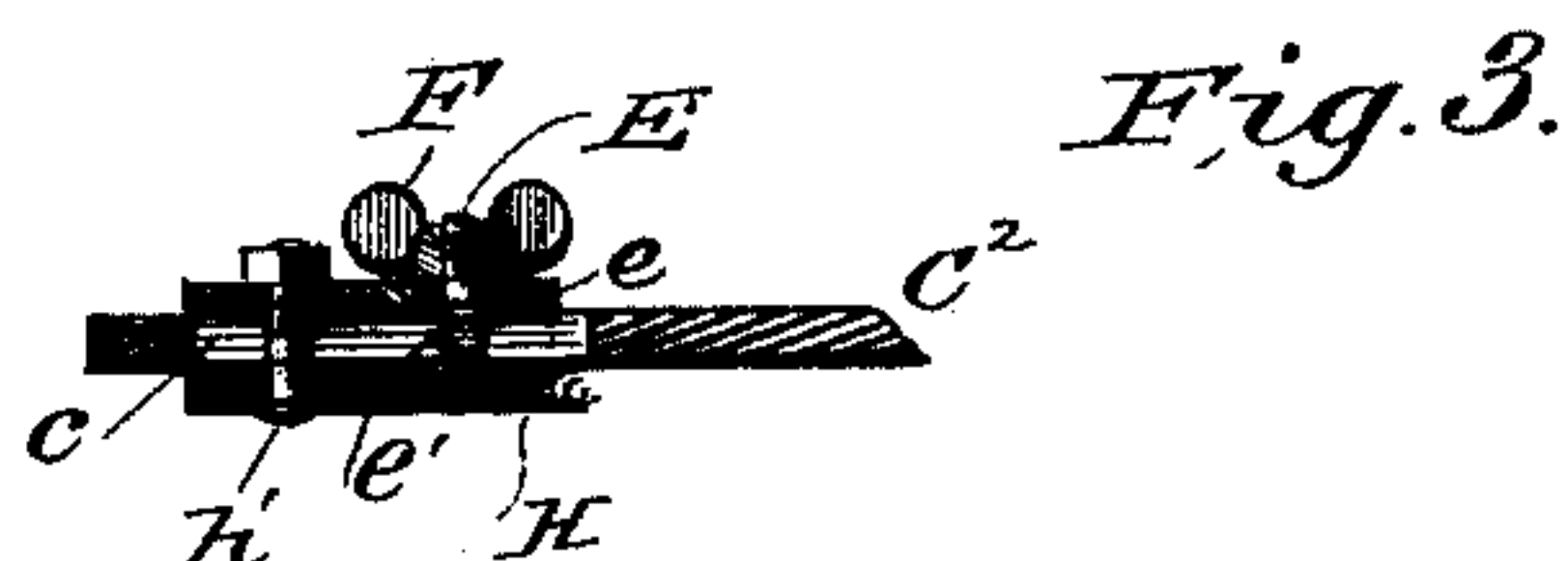
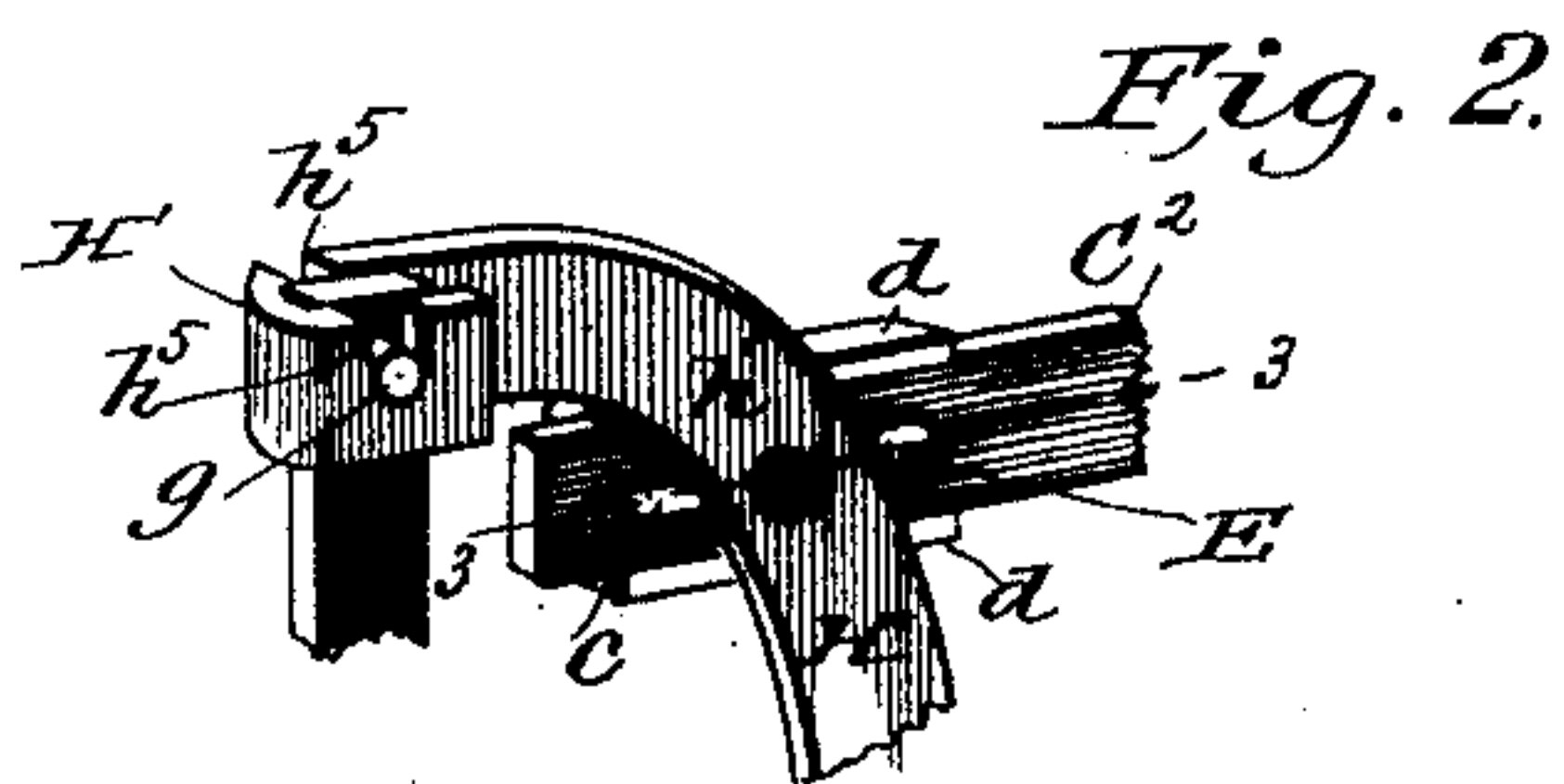


Fig. 7



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# UNITED STATES PATENT OFFICE.

JAMES S. LAMAR, OF VALDOSTA, GEORGIA.

## HAND-PROPELLER FOR BOATS.

SPECIFICATION forming part of Letters Patent No. 410,365, dated September 3, 1889.

Application filed May 15, 1889. Serial No. 310,922. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES S. LAMAR, residing at Valdosta, in the county of Lowndes and State of Georgia, have invented certain  
5 new and useful Improvements in Hand-Propellers, of which the following is a specification.

My invention relates to hand-propellers for boats, being an improvement on the invention for which Letters Patent No. 398,629 were  
10 granted to me, dated February 26, 1889; and it consists in the peculiar combination and novel arrangement of parts, as will hereinafter be fully described in the annexed specification and particularly pointed out in the  
15 claims, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of my improvements as applied to a boat. Fig. 2 is a  
20 detail perspective view of the forward end of one of the supporting-frames. Fig. 3 is a horizontal section on the line 3 3, Fig. 2. Fig. 4 is a detail view of one of the brackets for holding the supporting-frames. Fig. 5 is  
25 a detail perspective view illustrating one of the paddles and in connection with the swinging arm; and Figs. 6 and 7 are detail views, hereinafter referred to.

Referring to the accompanying drawings,  
30 A indicates a boat, about centrally of which I locate my improved propelling devices. For detachably securing the propelling devices to the boat I provide socketed brackets B B, which are securely fastened to the body  
35 of the boat, preferably to the seat *a*, as shown most clearly in Figs. 1 and 4 of the drawings. These brackets extend over the sides of the boat, as at *b*, and are each provided with a square or rectangular socket *b'*, in which are  
40 fitted the lower ends of the vertical arms *C'* *C'* of the supporting-frames C C. The upper ends of the frames C C are formed into horizontal forwardly-extending arms *C*<sup>2</sup> *C*<sup>2</sup>, provided near their forward ends with horizontal  
45 slots *c c*, as shown.

On the forward ends of the arms *C*<sup>2</sup> *C*<sup>2</sup> are secured clip-like plates D D, **C** shape in cross-section, the horizontal members *d d* of which embrace the upper and lower edges of the  
50 arms *C*<sup>2</sup> *C*<sup>2</sup>. The plates D are adapted for longitudinal adjustment on the arms *C*<sup>2</sup> *C*<sup>2</sup>, and are held in such adjustment by means

of bolts E, the shanks *e* of which are passed through the plates D D and have thumb-nuts F adjusted on their outer ends, as shown. 55 That portion of the bolts E which engages the slots *c c* is squared, as at *e' e'*, to hold the same from turning when it is desired to adjust the clips D on the arms *C*<sup>2</sup> *C*<sup>2</sup>.

G G denote the paddle-supporting arms, 60 which are detachably and pivotally supported at their upper ends in stirrup-like bearings H' H', formed in the upper ends of arms H H, adjustably pivoted to the outer ends of the arms *C*<sup>2</sup> *C*<sup>2</sup> of the supporting-frame C. To 65 admit of the ready adjustment of said arms H H, I pivot them on bolts *h'*, passed through the slots *c c* and secured to the clip-like plates D D. By this means the arms H H may be readily adjusted backward and forward on the arms 70 *C*<sup>2</sup> *C*<sup>2</sup> by simply turning the thumb-nuts F F, and thereby adjusting the bearings for the paddle-supporting arms as the operator may require. To admit of the paddles being quickly adjusted vertically, as the condition 75 of the depth of the stream on which the boat rides may require, I project the lower ends of the arms H so as to pass the outer faces of the vertical arms *C'* *C'* and engage rack-bars *C*<sup>3</sup>, formed thereon. By this means the oper- 80 ator can quickly grasp the projecting ends *h*<sup>2</sup> *h*<sup>2</sup> of the arms H H and elevate or lower the paddles, as the occasion may require. The upper ends of the paddle-supporting arms G G are provided with laterally-projecting studs 85 *g g*, which journal in the bearings in the outer ends of the arms H, as shown.

To admit of the ready attachment and detachment of the arms G G from their bearings, I form the outer or stirrup section of the 90 arms H by bending them into an approximate **C** shape, and provide the portions H' with sockets *h*<sup>5</sup> *h*<sup>5</sup>, into which the lateral projections *g g* are seated when adjusted for operation. 95

I denotes the paddles, each of which is formed of two blades I' I', which are hinged at their inner edges to the lower flattened part of the shaft J. The forward end of this flattened part J is formed with a beveled edge 100 to cause it to cut through the water with the minimum amount of resistance when the paddle is swung forward.

Springs K K are secured to one end of the



part J near the top and bottom of the blades, and have sliding connections with the blades, being held by clips K' K', under which they freely move. These springs are curved outward, so that they will hold the blades when at rest partially open.

In making the backward stroke the pressure of the water overcomes the springs and closes the hinged blades together. When this stroke is ended, the springs instantly act to partially open the blades ready for the forward stroke. As the forward stroke (*i. e.*, the stroke which impels the boat forward) is begun, the water pressing against the inner faces of the blades opens them completely, pressing them back until they come in contact with the stops  $j^2$ , which stops them just before they reach a straight line with each other, the springs being thus compressed. At the end of this stroke the springs tend to partially close the hinged blades, and it will be seen that the springs have a double action on the blades, assisting both in closing and opening them.

It will be seen that if the springs were not used the water would still open and close the blades; but the springs cause them to operate in a far more steady, noiseless, and satisfactory manner. The shafts J are rounded above their lower ends and are secured and work in bearings G' G' at the lower end of the bars G. The shafts J have each at their upper ends a projection  $J^2$ , which bears against the top of the upper bearing G' and holds the shaft J in place in the bearings. The outer end of each projection  $J^2$  has a knob or handle  $J^3$  for convenience of grasping it. By means of these handles the shafts J J can be readily turned outward to the extent or end of their movement in that direction and the paddles are turned or set for direct action to drive the boat forward, while by turning the handles inward for the extent of their movement in that direction the shafts J are turned for a half-revolution, reversing the paddles, so that they will operate to drive the boat backward, as will be clearly seen. The handles are held in place when turned to either side by spring-catches L L, under which the handle projections  $J^3$  are pushed, these catches being slightly recessed on their under sides at l, and will hold the handles firmly and yet permit them to be promptly and conveniently disengaged.

The bars G G are connected by the handle N, which is rounded for convenience in grasping it with the hands. The ends of the handle-bar N rest in curved spring metal supports O O, secured upon the front face of the arms G G, as shown. The portions *nn* of the handle-bar N, which rest in the supports O O, are slightly flattened, so as to permit of the easy introduction of said handle-bar in its supports. By this construction, which is clearly shown in Figs. 6 and 7, it will be seen that after the handle-bar is slipped in place

by turning the bar with the hand it is made tight in its place.

Metal stop-bands P P are disposed upon the ends of the handle-bar to each side of the supports O, which prevent the handle from slipping in the supports O, and yet leave it free to be instantly lifted therefrom when desired.

Some of the important advantages of my invention are the ease with which it propels, the work being much lighter than with ordinary oars; the simplicity and safety of the operation, any one, even an inexperienced lady, being able to operate the device; the comfort and satisfaction of facing in the direction of the boat's movement; the advantage to fishermen, huntsmen, and others of being able to propel with one hand when occasion requires; the ready and perfect command of the boat which it gives to the boatman, as by simply putting more pressure on one paddle than the other the course of the boat is changed; by reversing one paddle by its handle J' the boat immediately turns around, while on reversing both paddles the boat is backed, and all these changes are made with the utmost ease and certainty. Finally, the weight of the hand and arm is supported by the handle, nor need the handle be so firmly grasped, and, the handle being always at right angles with the line of motion, the hand and wrists will not twist in rowing, thus greatly reducing fatigue.

While I prefer to support the frame C in the brackets B and to attach the said brackets to the boat, as described, it is obvious that without modifying the essential features of this support the shape thereof and the mode of attaching it to the vessel may both be changed to conform to peculiarities of structure or other conditions.

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

1. A hand-propeller for boats, consisting of a vertically-disposed frame secured to the boat, provided with longitudinal extending horizontal arms, swinging bars pivotally supported from the outer ends of said longitudinal arms, and paddles secured to the lower ends of said bars, substantially as shown and described.

2. The combination, with socketed bracket-plates secured to the boat-body and projected over the sides thereof, of a vertically-extending frame supported in said socketed plates, said frames provided with forwardly-extending horizontal members, swinging bars supported at their upper ends from said horizontal members, and paddles secured to the lower ends of said bars, substantially as and for the purpose described.

3. In a hand-propeller, the combination, with the supporting-frame C, provided with horizontal members  $C^2$ , of the arms H H, pivotally supported on said arms  $C^2$ , said arms H provided with bearing-yokes H' at their upper



ends, swinging bars supported at their upper ends in said yokes H', and paddle-blades secured to the lower ends of said bars, substantially as and for the purpose described.

5 4. In a hand-propeller, the combination, with the supporting-frame C, provided with horizontal members C<sup>2</sup>, and adjustable clips D, secured upon said members C<sup>2</sup>, of arms H H, pivotally supported on said clips D, provided  
10 at their outer ends with bearings or yokes H', the swinging bars G G, supported at their upper ends in said bearings H', and paddles secured to the lower ends of said bars, substantially as and for the purpose described.

15 5. The combination, with frames C C, formed of vertical arms C' C', provided with rack-sections C<sup>3</sup> C<sup>3</sup> and horizontal members C<sup>2</sup> C<sup>2</sup>, and adjustable clips D D, secured upon the outer ends of the members C<sup>2</sup> C<sup>2</sup>, of the arms  
20 H, pivotally secured near their upper ends to the said clips D, the forward ends provided with yokes or bearings H', said arms H extended downwardly and rearwardly and adapted to engage the racks C<sup>3</sup>, swinging bars  
25 G, supported at their upper ends in the bearings H', and paddles secured to the lower ends of said bars, all arranged substantially as and for the purpose described.

30 6. The combination, with the supporting-frames C C, and the arms H H, pivotally secured to the outer ends of the members C' C' of said frames C, of the swinging arms G G, journaled at their upper ends to the outer ends of the arms H, and the paddles reversibly secured to the lower ends of said bars, substantially as shown and described.

35 7. The combination, with the main frame and the arms H, pivoted to the horizontal members of said frame, said arms provided with stirrup-like bearings H' at their outer ends, of  
40 the swinging bars G, provided with lateral lugs at their upper ends engaging the stirrup-bearings H', and the paddles secured to the lower ends of said bars, substantially as and  
45 for the purpose described.

8. In a hand-propeller, the combination, with the paddle-bars G G, having the bearings G' G' and the spring-catches L L at their lower ends, of the rounded shafts J, carrying the paddles at their lower ends, journaled in  
50 said bearings, and having projecting handles at their upper ends engaging the latches L, substantially as and for the purpose described.

9. The combination, with the shafts jour-  
55 naled to the lower ends of the supporting-arms G G, formed with beveled rear edges and provided with the stops j<sup>2</sup>, of the paddles formed each of two blades hinged at their inner ends to the shafts, substantially as shown  
60 and described.

10. The combination of the shafts journaled at the lower ends of the swinging bars G G, said shafts provided at their lower ends with paddles formed each of two blades  
65 hinged at their inner ends to the shafts, the springs secured to the shafts and bearing against the blades to normally force them partially open, and the stops formed on the shafts to limit the outward movement of said  
70 blades, substantially as shown and described.

11. In a hand-propeller, the combination of the supporting-frame, the pivotal arms H, secured thereto, as shown, said arms provided with bearings H' at their outer ends, the  
75 swinging arms G G, carrying the propeller-blades at their lower ends and journaled at their upper ends in the bearings H', and provided with spring-supports O O near their lower ends, the handle-bar N, provided with  
80 flattened ends n n, engaging the supports, and bands P P, disposed on the ends of said bar to each side of the supports, substantially as and for the purpose described.

JAMES S. LAMAR.

Witnesses:

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S. M. LAMAR.