

(No Model.)

2 Sheets—Sheet 1.

G. WILLARD.

OAR OR PADDLE FOR PROPELLING BOATS.

No. 327,909.

Patented Oct. 6, 1885.

Fig. 1.

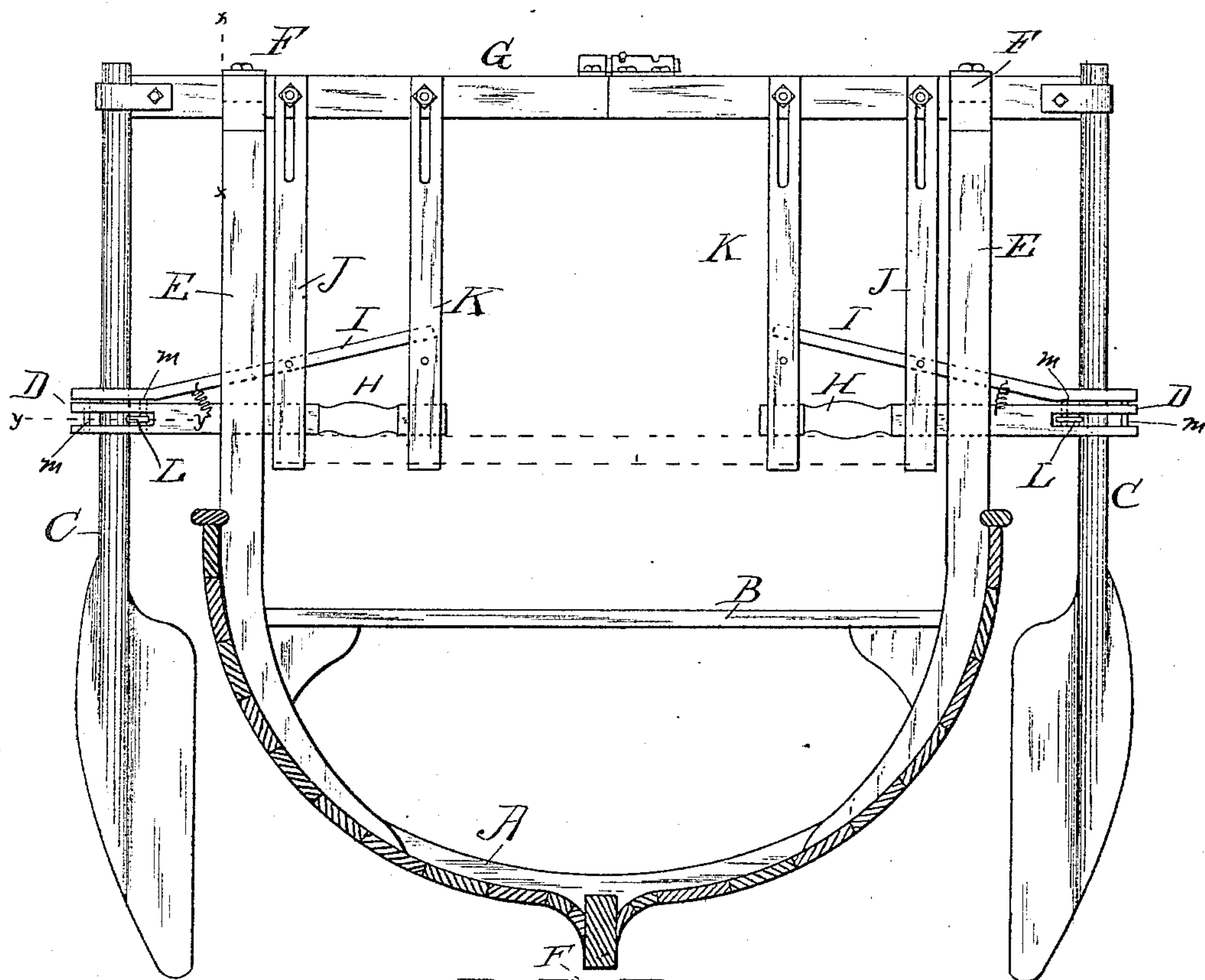
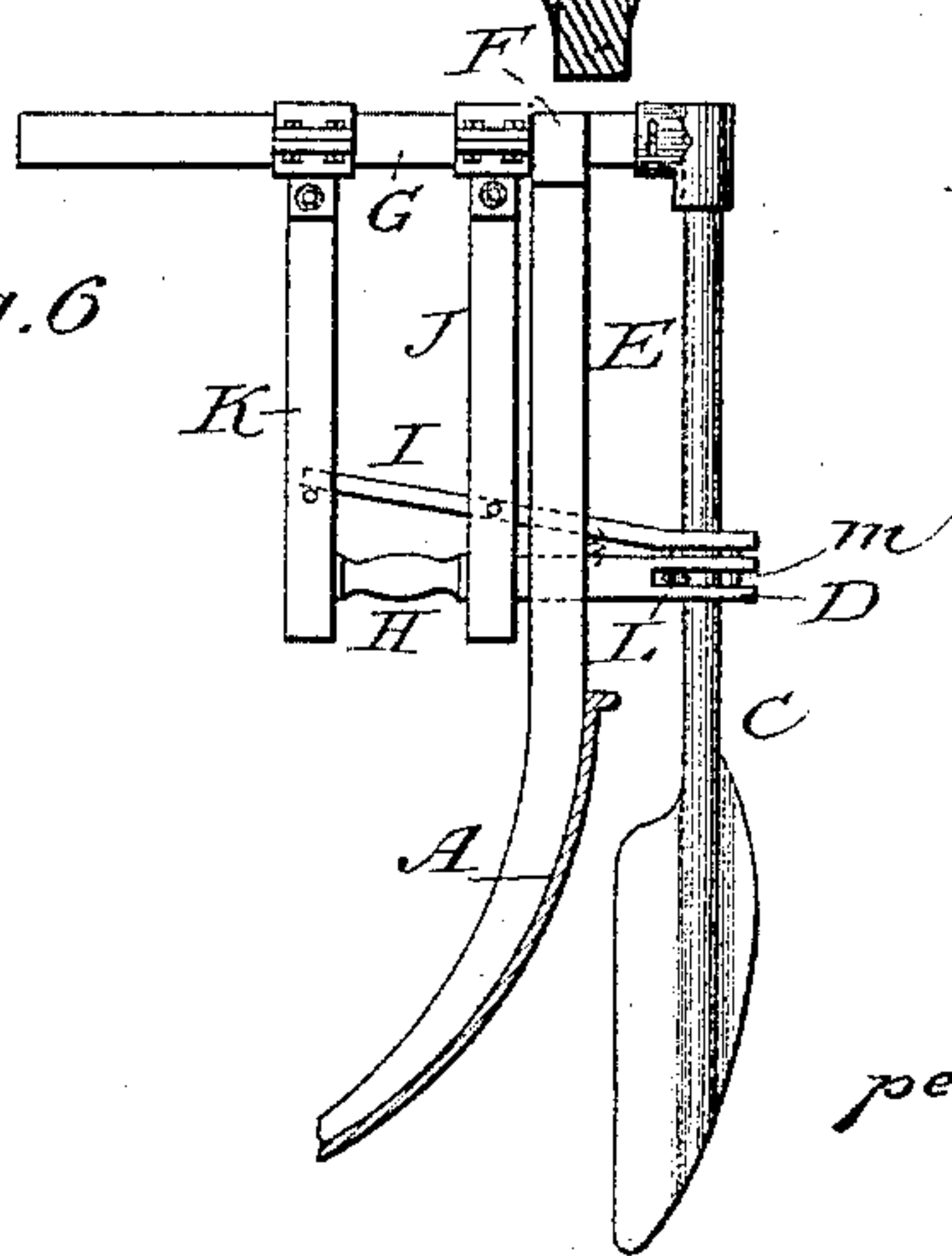


Fig. 6



Witnesses:
Lew. C. Curtis.
E. A. Hubbard.

Inventor:
George Willard
per Banning & Banning.
his Attorneys:

(No Model.)

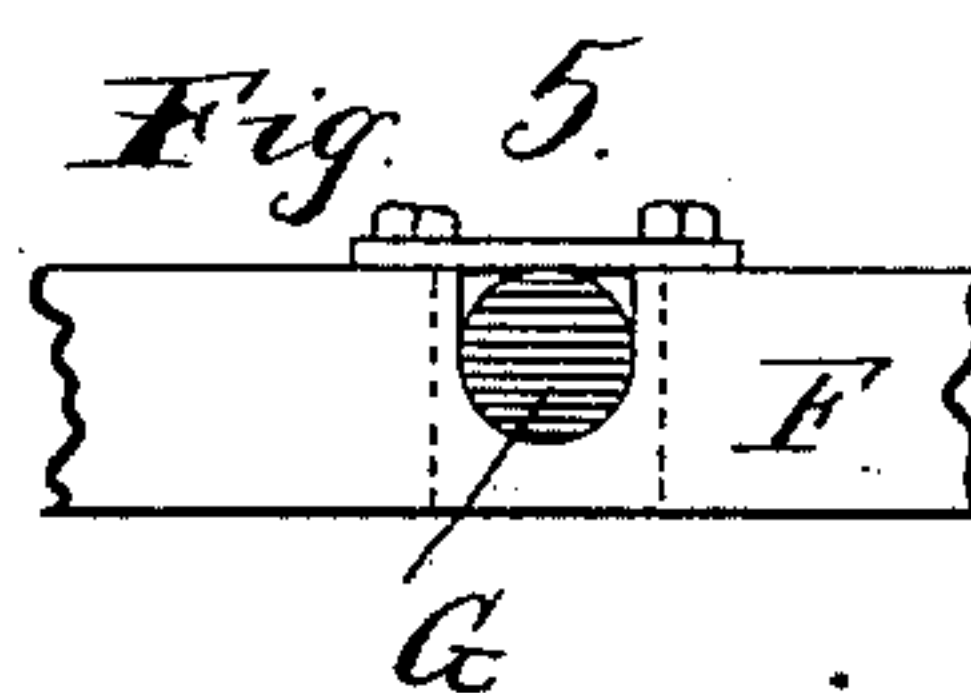
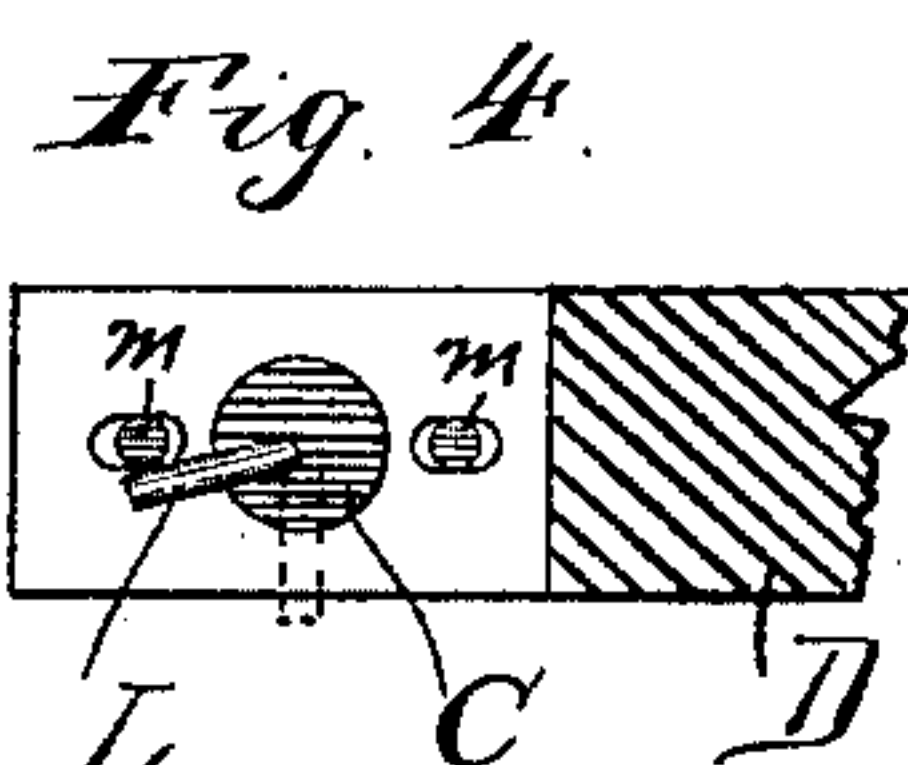
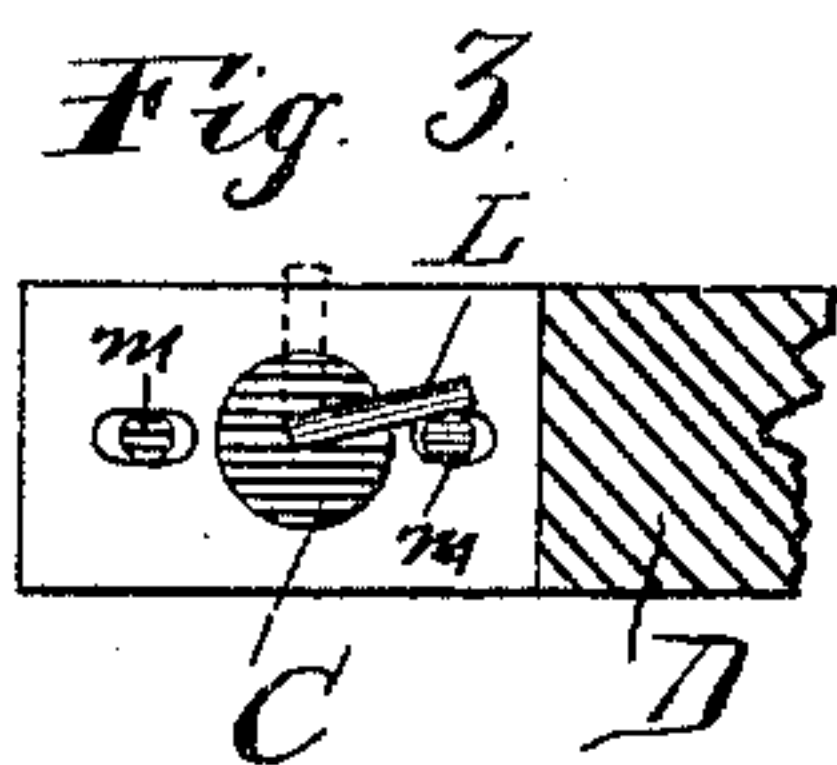
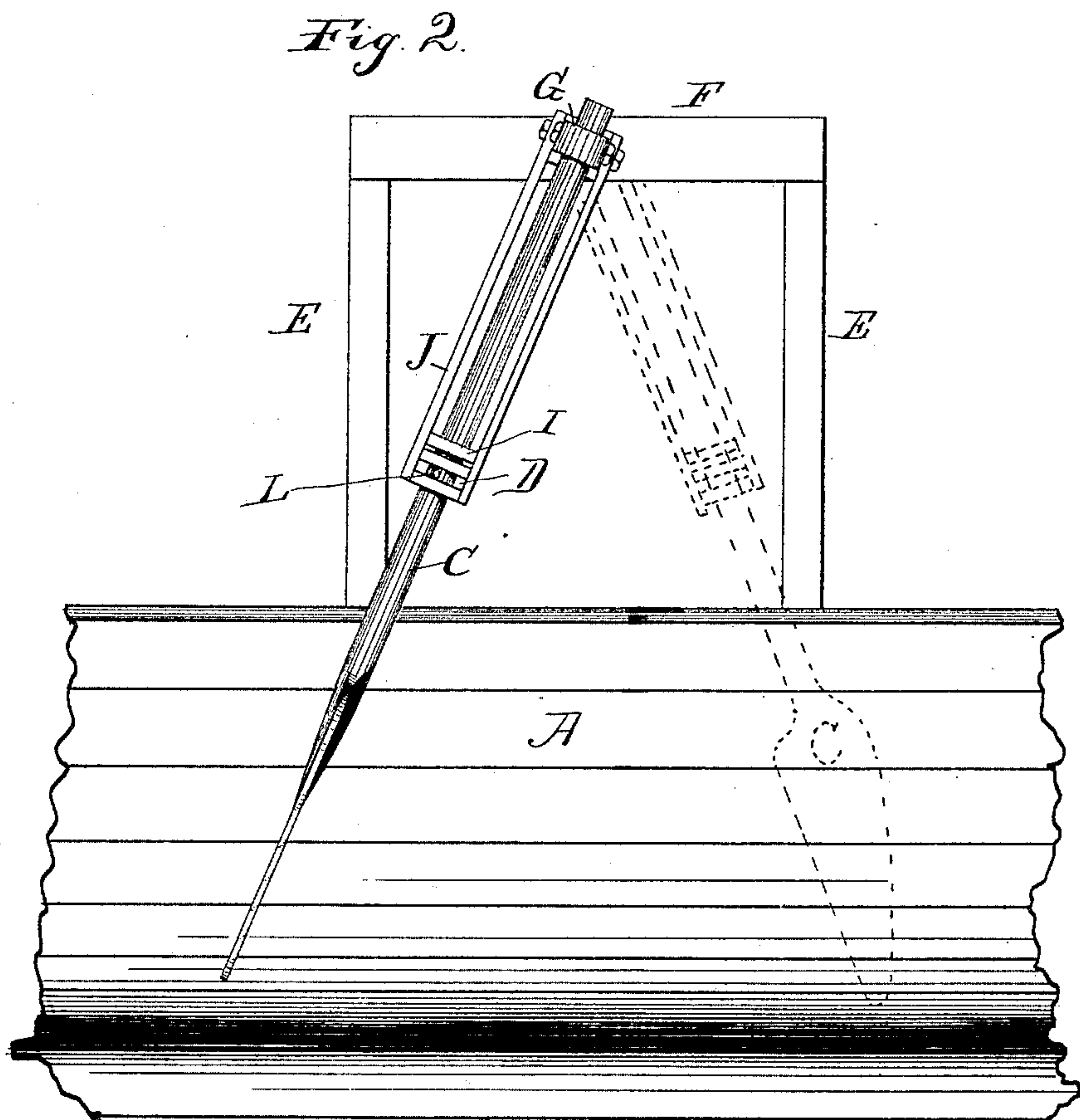
2 Sheets—Sheet 2.

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Patented Oct. 6, 1885



Witnesses:
Lew. C. Curtis
E. P. Hubbard.

Inventor:
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his Attorneys.

UNITED STATES PATENT OFFICE.

GEORGE WILLARD, OF HYDE PARK, ILLINOIS.

OR OR PADDLE FOR PROPELLING BOATS.

SPECIFICATION forming part of Letters Patent No. 327,909, dated October 6, 1885.

Application filed February 11, 1885. Serial No. 155,645. (No model.)

To all whom it may concern:

Be it known that I, GEORGE WILLARD, a citizen of the United States, residing in the village of Hyde Park, Cook county, Illinois, have invented certain new and useful Improvements in Oars or Paddles for Propelling Boats, of which the following is a specification.

The object of my invention is to make an oar or paddle for row-boats that will feather itself, and which does not require to be lifted out of the water at each stroke, and means for operating the same; and my invention consists in the features of construction hereinafter described.

In the drawings, Figure 1 represents a transverse vertical sectional view of a row-boat provided with my oars and attachments as the same appear from the rear. Fig. 2 represents a transverse sectional view of the same viewed from the side. Figs. 3, 4, and 5 are detail views of certain parts of construction, as hereinafter more particularly described, and Fig. 6 shows a modification of the above construction.

In the drawings, A represents the boat; B, the seat; C, the oars; D, the oar or paddle lock; E, vertical standards rising from the sides of the boat, of which I have represented two on each side; F, bars on each side for connecting each pair of standards; G, the transverse piece journaled in suitable bearings in the connecting-bars F; H, handles for operating the oars, on the outward ends of which are located the oar-locks D; I, pivoted levers; J, uprights in which such levers are pivoted; K, uprights in which the inner ends of the handles are fastened; L, pins or studs placed horizontally through the oar-shaft; m, vertical pins in the oar-locks adapted to be raised with the pivoted levers I.

In constructing a boat with my improved oars and apparatus for operating the same, I take a row-boat of the ordinary construction and extend two standards upward from each of its sides to a suitable height. I connect these two standards or uprights together by means of bars at each side of the boat, so as to make two sets. These connecting-bars are made of sufficient strength and size to admit of their containing journals in them, placed preferably about their center longitudinally. I then

run a transverse piece or bar across the boat, resting in the journals in the connecting-bars, so as to turn and oscillate freely therein, and extending out on each side beyond the exterior of the boat some distance. This transverse oscillating bar is preferably jointed in the middle, so that either half may be freely turned or oscillated, or either oar used or moved back and forth without the other, as shown in the drawings. On the ends of this transverse bar or piece I attach straps, so as to confine the upper end of the oar-shaft within them, but with sufficient looseness to permit them to turn therein. From this cross-piece I suspend two uprights, J and K, near each side of the boat, as shown in Fig. 1. At the lower ends of these upright pieces or standards I attach the handles H, with a suitable hand-hold between them, and extend such handles out beyond the outer sides of the boat until they are under the outer ends of the transverse piece G. In the extended ends of these handles I arrange the oar or paddle locks, which in this case consist of vertical holes, through which the shafts of the oars or paddles may be passed, and on up through the holes provided by the straps on the ends of the oscillating cross-piece G. Immediately above the handles I place levers I, pivoted in the uprights J, and having their outer ends immediately above the oar-locks. These pivoted levers are also provided with holes, which are located just above the oar-locks in the extended ends of the handles, and are large enough to allow the shafts of the oars to pass through them. Two pins or studs, m, pass down from these pivoted levers, to which they are rigidly connected, through the extended ends of the handles on the inside and the outside of the oar or paddle locks. The extended ends of the handles are provided with horizontal slots, as shown in Fig. 1. The shafts of the oars or paddles are now passed up through the oar-lock and hole in the pivoted levers until their upper ends rest in the holes or bearings provided for them in the ends of the transverse oscillating piece G. To prevent their falling out, as well as for another purpose, hereinafter mentioned, pins L are placed transversely in the oar or paddle shafts, so as to rest within the slots in the extended ends of the handles above mentioned.

By having a series of holes in the oar-shafts the depth which the oar-blades are inserted in the water may be regulated at pleasure. These pins *L* should be placed in the oar-shafts so that they will extend out therefrom in a line with the widest portion of the oar-blade, and so that as the oar-blade operates in the water they will strike against the vertical pins or studs *m*—one or the other—as the oar or paddle blade is turned one way or the other. To turn the oar-blades or either of them entirely around, so as to row or paddle in an opposite direction, or to aid in steering the boat to the right or to the left, or to aid in turning the boat around, the pivoted levers can be depressed and the studs or pins *m* lifted above the horizontal slots in the extended ends of the handles, in which case the pins *L* in the oar-shafts are free to turn entirely around. After thus reversing the position of the oar-blades the outer ends of the pivoted levers may be permitted to be drawn back to their place. To accomplish this coiled springs may be provided, as shown in Fig. 1, and the studs *m* passed down to their normal position. As above described, and as represented in the drawings, the oars or paddles and other various attachments are suspended from the transverse piece *G*, so that as this piece or either half of it is turned in its bearings the oar will incline to the rear or forward portions of the boat as the forward and backward strokes are made, as shown in the dotted lines in Fig. 2. To secure the proper feathering of the oar or paddle blades in the water, I make the greater portion of the blades on the rear side of the oars when standing with their sharp or knife edges toward the front of the boat. In the backward pull of the oars the oar-blades will assume a position that presents their full breadth to the water, as shown in Fig. 1, in which position they are firmly held against the pressure of the water by means of one of the vertical pins *m*. I have shown them with the largest portion of the blade toward the sides of the boat in this figure, though of course they can as readily turn with the largest sides of the blades away from the boat; but in either case during the backward strokes of the oars the pins *L* will bear against one of the vertical pins *m*. The forward stroke of the oars, however, will cause the water to bear against the larger sides of the oar-blades, now no longer held against the resistance of the water, which will cause the blades instantly to feather and present their knife-edge to the water, when they will be advanced to a forward position preparatory to the next backward stroke; but the instant this backward stroke is commenced the pressure of the water will turn the blades until the pins *L* are again brought in contact with one of the upright pins or studs *m*, when the turning will be arrested, and the full breadth of the oar-blades will bear against the water and propel the boat forward. This operation will of course be repeated with each forward and

backward pull on the handles by which the oars are operated.

To reverse the operation of both or either one of the oars and force the boat backward or to turn it around, the outer ends of one or both of the pivoted levers or ways and the oar are turned entirely around, as hereinbefore explained.

There are a variety of ways in which my improvement and the application of it may be modified in practice without departing from the spirit and gist of the invention. For instance, the "oscillating bar" can be made non-oscillating and rigidly fastened in its supports if the hangers and the ends of the oar-shafts, when carried up and attached to such bar, are fastened to it by thimble or sleeve connections that would permit them to turn on such bar, and at the same time allow the oar-shafts to turn as the oar feathered. In this case the hangers and oars would turn and oscillate on the bar, instead of the bar oscillating and carrying them with it. A precisely similar result would be produced. I have illustrated this in Fig. 6.

What I claim is—

1. In a row-boat, the combination of up-rights or supports carrying an upper transverse piece or bar, a lower transverse operating bar or bars swinging therefrom, and oars attached to or connected with the outer ends of such upper and lower transverse bars, whereby they may be moved forward and backward in the operation of rowing while remaining in the water, substantially as described.

2. In a row-boat, the combination of up-rights or supports carrying an upper transverse piece or bar, a lower transverse operating bar or bars swinging therefrom and provided with hand-holds, and oars attached to or connected with the outer ends of such upper and lower transverse bars, whereby they may be moved forward and backward in the operation of rowing while remaining in the water, substantially as described.

3. In a row-boat, the combination of up-rights or supports carrying an upper transverse piece or bar, hangers depending from such upper bar and suspending a lower transverse operating bar or bars, and oars attached to or connected with the outer ends of such upper and lower transverse bars, whereby they may be moved forward and backward in the operation of rowing while remaining in the water, substantially as described.

4. In a row-boat, the combination of up-rights or supports carrying an upper transverse piece or bar, hangers attached thereto by loose sleeve-connections and oscillating thereon and suspending a lower transverse operating bar or bars, and oars attached to or connected with the outer ends of the lower transverse bar or bars, and to or with the outer ends of the upper transverse piece or bar by loose sleeve-connections and oscillating thereon, whereby they may be moved forward and backward in the operation of rowing while

remaining in the water, substantially as described.

5. In a row-boat, the combination of up-
rights or supports carrying an upper trans-
verse piece or bar, hangers attached thereto
by loose sleeve-connections and oscillating
thereon and suspending a lower transverse
operating bar or bars, and oars attached to or
connected with the outer ends of the operating
bar or bars, whereby they may be moved for-
ward and backward in the operation of row-
ing while remaining in the water, substan-
tially as described.

6. In a row-boat, an operating bar or piece
provided at its outer end or ends with a ver-
tical oar-lock and a horizontal slot, in combina-
tion with an oar-shaft working in such ver-
tical oar-lock, and provided with a horizontal
pin or stud working in such horizontal slot,
substantially as described.

7. In a row-boat, an operating bar or piece
provided with one or more vertical holes in-
side or outside of the oar-lock, or both, in
combination with a lever, I, pivoted to the
hanger J, and provided with vertical pin or
pins working in such vertical hole or holes,
substantially as described.

8. In a row-boat, the combination of up-
right or supporting standards, a transverse

operating bar or piece provided with a ver-
tical receptacle or oar-lock, and a horizontal
slot and vertical hole or holes in its outer end
or ends, a pivoted lever provided with pin or
pins at its outer end, which fit in the hole or
holes in the operating-bar and pass down
through the horizontal slot, and oars whose
shafts pass up through the oar-locks or recepta-
cles in the operating-bar and provided with a
stud or pin, which rests in the horizontal slot
in the outer end of the operating-bar, and
which by striking against the vertical pin or
pins on the pivoted lever prevents the oar
from being turned more than half around un-
til the outer end of the pivoted lever and its
vertical pin or pins are raised, substantially
as described.

9. In a row-boat, the combination of up-
rights or standards, upper and lower trans-
verse bars supported by such standards and
connected and operating together, and an oar
having more of its blade on one side of its
longitudinal axis than the other, whereby it
will be caused to feather in the water, sub-
stantially as described.

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Witnesses:

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GEORGE R. WILLARD.