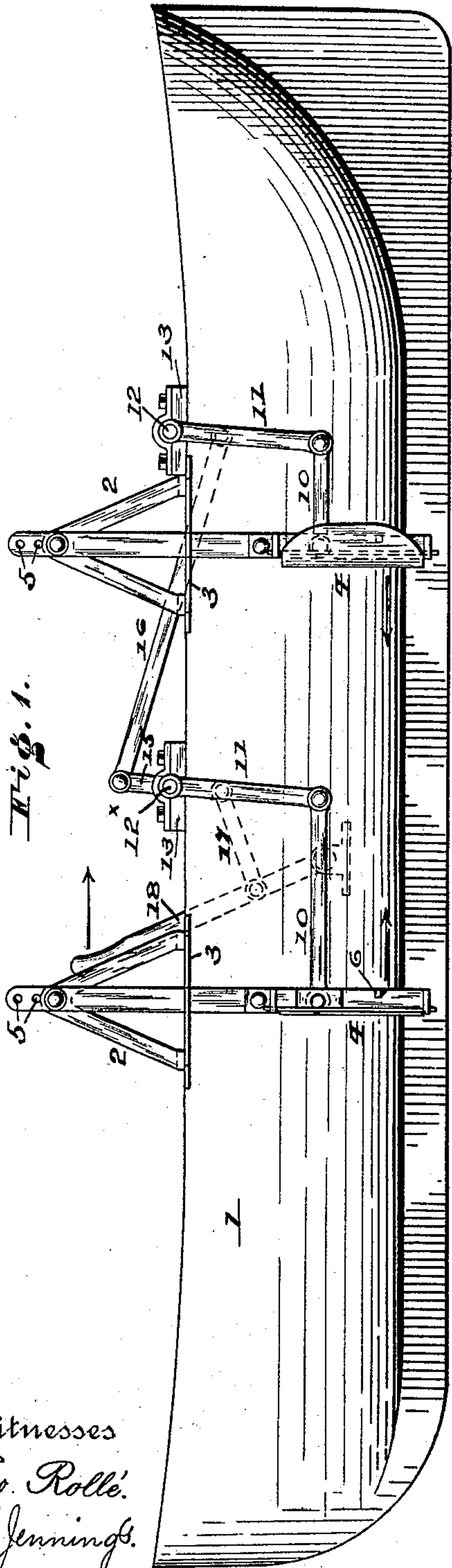


(No Model.)

S. A. WIGHT.
VIBRATING PROPELLER FOR BOATS.

No. 415,082.

Patented Nov. 12, 1889.



Witnesses
Theo. Rollé.
A. P. Jennings.

Fig. 3.

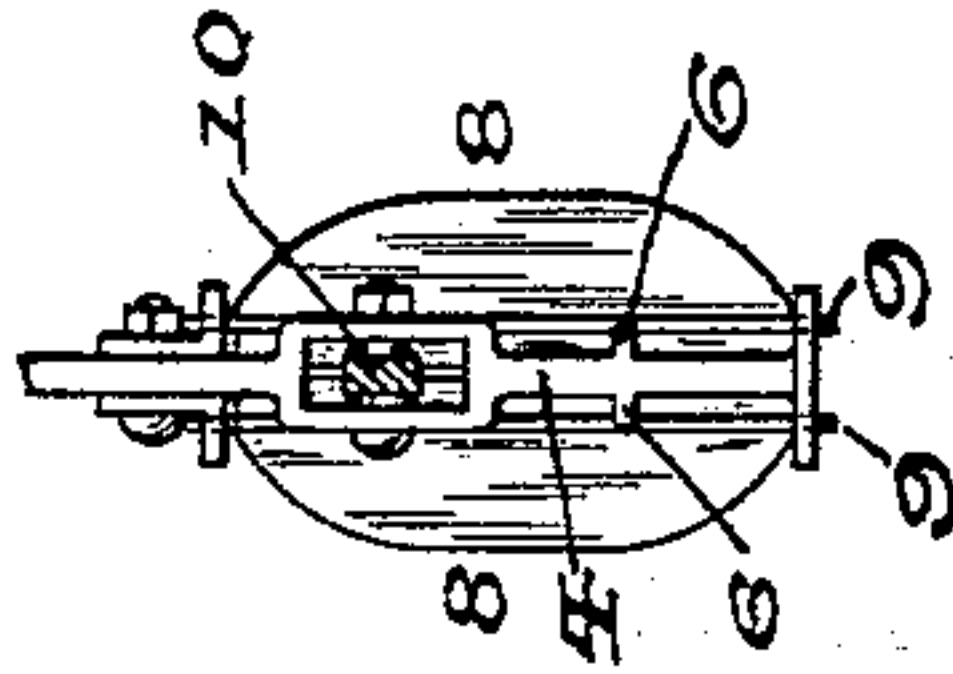


Fig. 2.

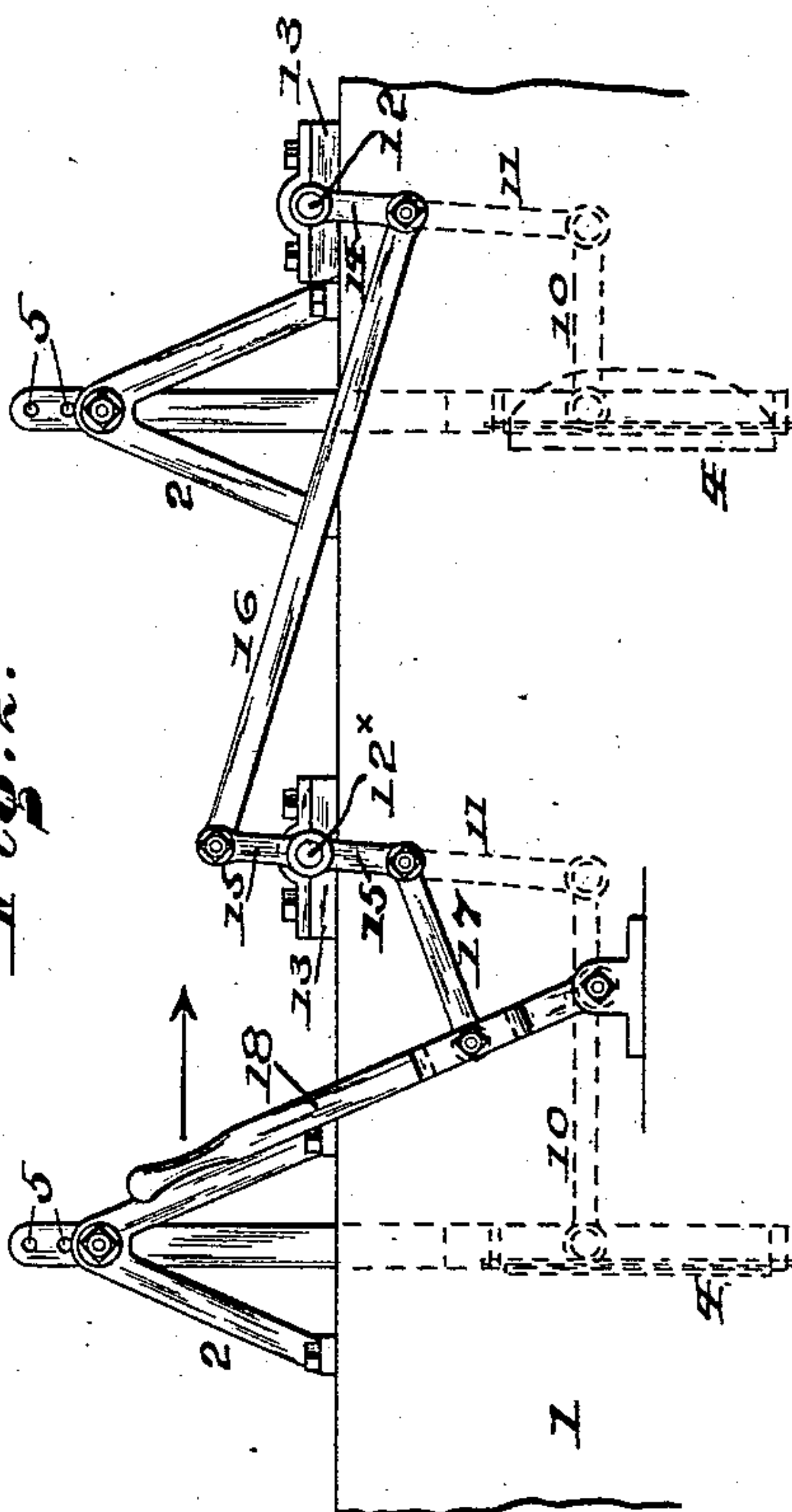
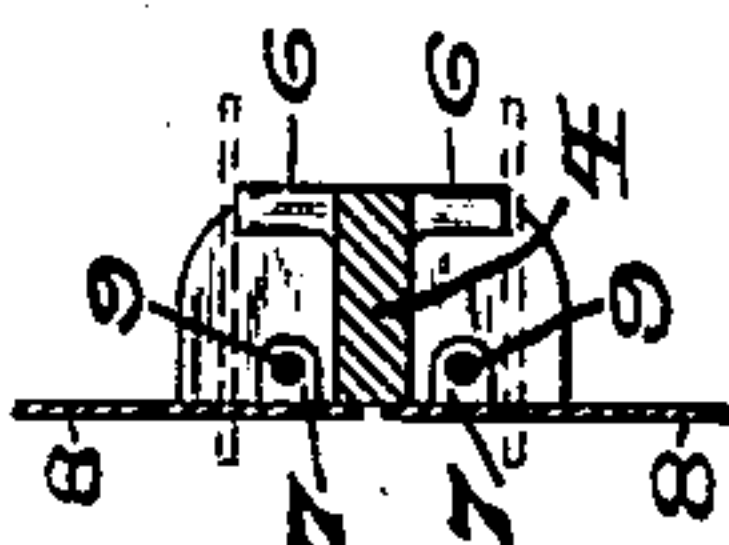


Fig. 4.



Inventor
Spencer A. Wight.

By his Attorneys,
Wiederheim & Spitzer

UNITED STATES PATENT OFFICE.

SPENCER A. WIGHT, OF PHILADELPHIA, PENNSYLVANIA.

VIBRATING PROPELLER FOR BOATS.

SPECIFICATION forming part of Letters Patent No. 415,082, dated November 12, 1889.

Application filed March 22, 1889. Serial No. 304,323. (No model.)

To all whom it may concern:

Be it known that I, SPENCER A. WIGHT, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Rowing Apparatus, which improvement is fully set forth in the following specification and accompanying drawings.

My invention relates to improvements in rowing apparatus, the object being to provide an apparatus of this character which can be easily operated and by which great speed may be attained.

To attain the desired object the invention consists of fore and aft oars operating in such manner that one set is always in service; further, in fore and aft feathering-oars and mechanism as claimed for operating said oars alternately; and, finally, the invention consists of the combination of parts and their adaptation for service, as hereinafter described and specifically claimed.

Figure 1 represents a side elevation of an apparatus embodying my invention. Fig. 2 represents a side elevation of a portion thereof. Figs. 3 and 4 represent detail views of one of the feathering-oars.

Similar numerals of reference indicate corresponding parts in the several figures.

Referring to the drawings, the numeral 1 designates the boat, craft, or vessel of any desired construction to which my mechanism is applied.

2 designates upright posts or standards secured to the sides of the boat, and 3 designates slotted guides or plates carried by said uprights, which are to guide the oars and prevent lateral movement of the same.

4 designates the oars, which are pivoted at their upper ends to the uprights, and which are provided with a series of openings 5, which permits of an adjustment of the oars to vary the depth or amount of water they should take, as will be readily understood. The oars are provided with shoulders, lugs, or stops 6, for limiting the movement of the blades or feathers, as will presently appear, and are further provided with ears or lugs 7, to which the blades or feathers are pivoted.

8 designates the blades or feathers, having rods or pins 9, adapted to enter openings in

the ear 7, for pivoting the blades or feathers to the oars. From this construction it is evident that when the oars are moving forward the feathers are flat against the stops, thus offering no resistance to the water, and will open when moved rearward and pass with its entire surface against the water. Thus I provide a perfect feathering-oar.

To each oar is connected one end of a link or rod 10, the other end whereof is connected with a crank-arm 11 on the end of a shaft 12 or 12^x, which is mounted in a bearing or box 13, secured to the side of the boat. The rear shafts have on their inner ends crank-arms 14, and the fore shafts 12^x have double crank-arms 15. The crank-arms 14 and 15 are connected by rods or pitmen 16. To the crank-arms 15 are connected links 17, to which are attached the operating levers or handles 18, pivoted in the boat.

The operation is as follows: Power is applied to the levers 18, and by reason of the described mechanism the fore and aft oars move toward each other, the fore oars thus having their wings or feathers presented to the water and making the stroke, while the aft oars have their feathers closed by reason of the pressure of the water against the face thereof. Upon the levers being returned the action is reversed—viz., the fore oars close and the aft oars make the stroke—so that at each movement of the operating-levers one set of oars operate, or the action is reversed, thus providing a steady and even rowing action and enabling a great speed to be attained.

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

1: A rowing mechanism consisting of upright standards adapted to be secured to the sides of a boat and provided with slotted guides, oars pivoted at their upper ends to the upright standards, shafts journaled in bearings on the sides of the boat and having depending crank-arms connected therewith, rods pivotally connected with said oars and crank-arms, an arm connected with and extending above one of said shafts and pivotally connected with the crank-arm of the shaft in the rear thereof, and a handle pivoted at its lower end and connected by a link with

the crank-arm on the front shaft, said parts being combined substantially as described.

2. A rowing mechanism consisting of standards 2, having the guides 3, the oars 4, pivotally connected to said uprights and working in the guides 3, the oars 4, provided with oscillating blades 8 and pivoted at their upper ends to the said standards, two oscillating shafts, each of which is journaled in boxes secured to the vessel, the crank-arm 11, secured to said shafts, rods 10, pivotally connected with said

crank-arms and oars, the arm 15, extending upwardly from one of the shafts, the rods 16, connecting said arm 15 and the rear crank-arm, the pivoted handle 18, with link 17, connecting it to the front crank-arm, the oars 4 having oscillating blades 8, said parts being combined substantially as described.

SPENCER A. WIGHT.

Witnesses:

JOHN A. WIEDERSHEIM,
A. P. JENNINGS.