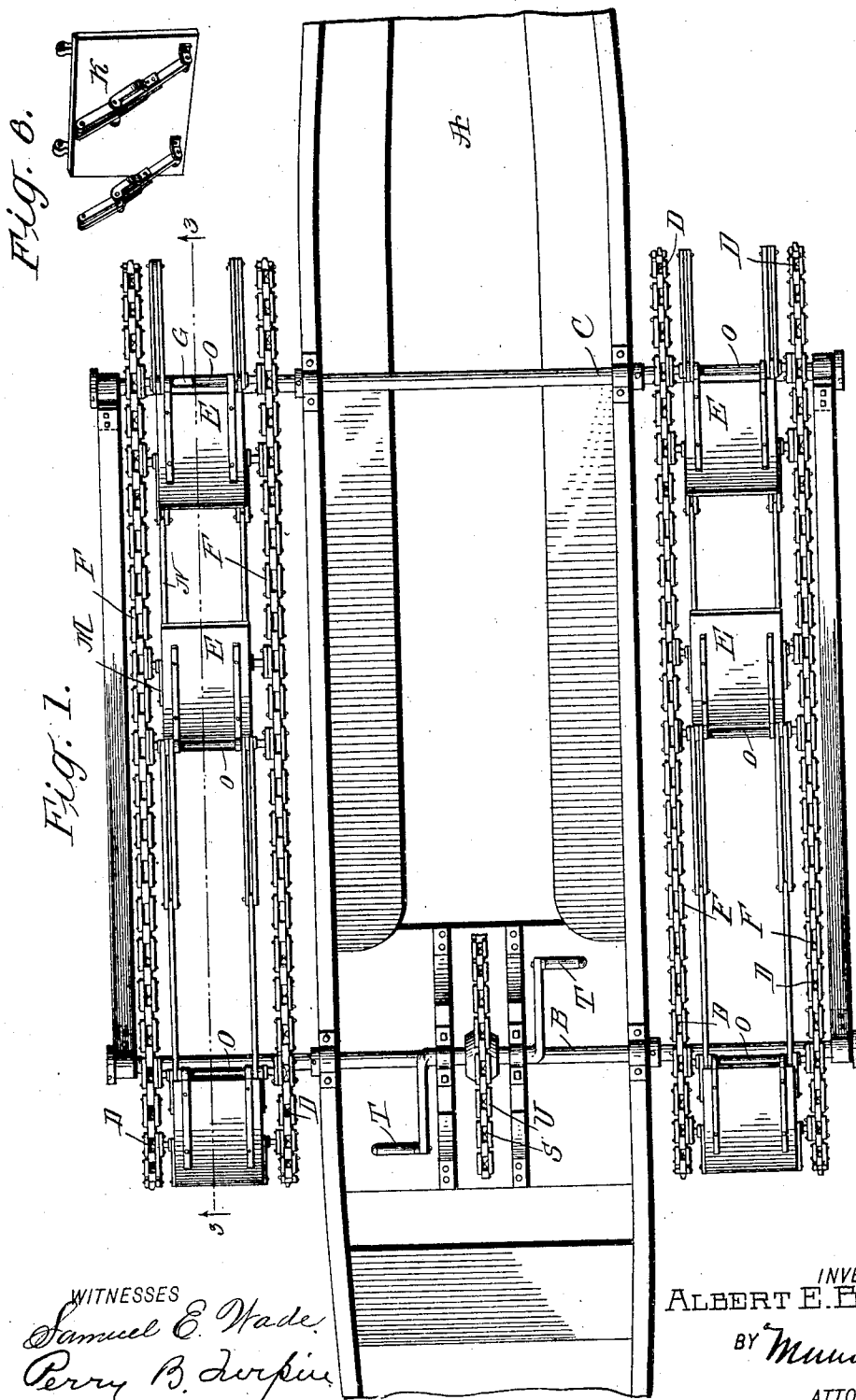


No. 876,133.

PATENTED JAN. 7, 1908.

A. E. BEEBE.
MARINE PROPULSION.
APPLICATION FILED JUNE 25, 1907.

2 SHEETS—SHEET 1.



WITNESSES
Samuel E. Wade
Perry B. Zupine

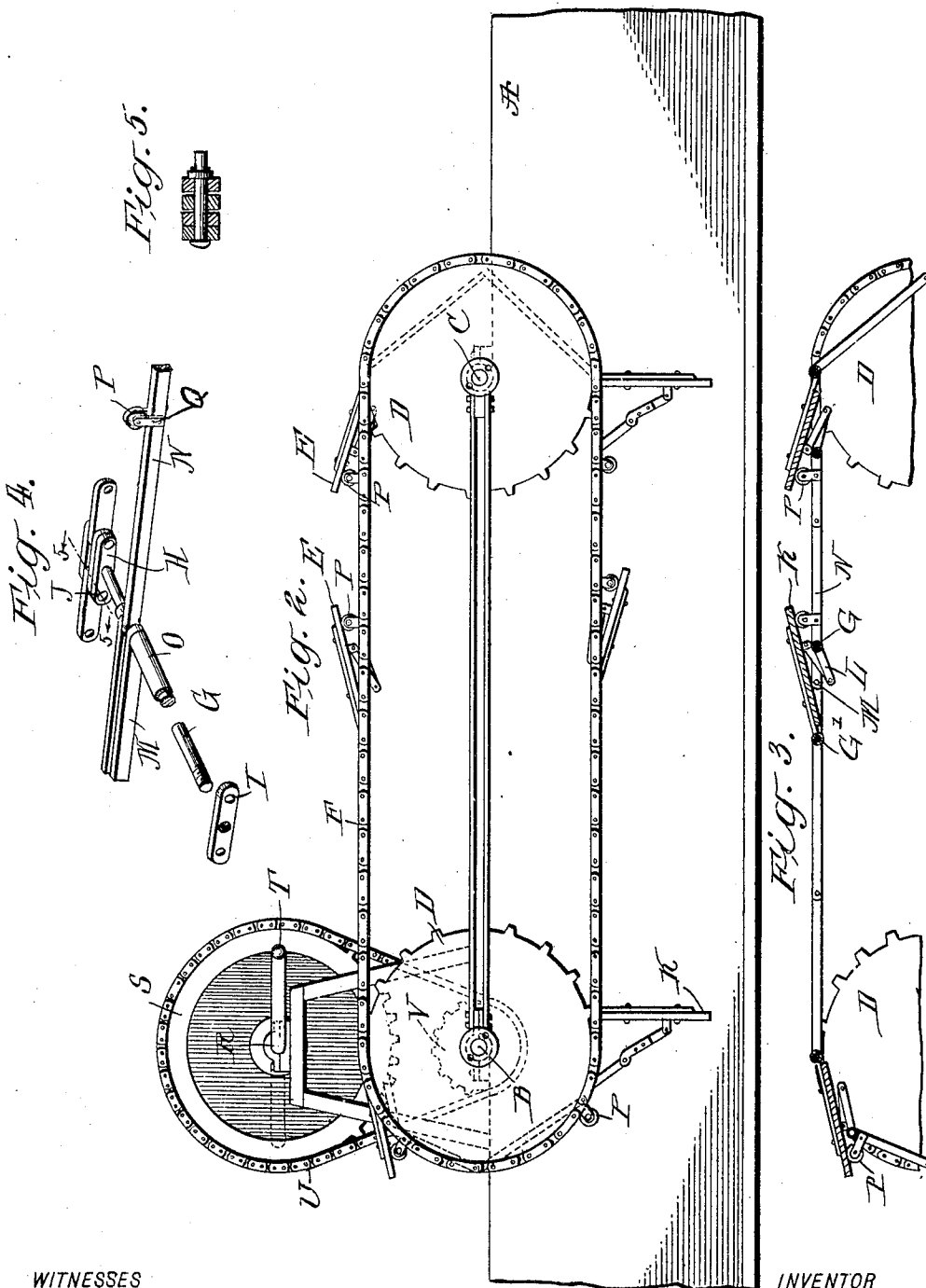
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BY *Munn & Co.*
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2 SHEETS—SHEET 2.



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ALBERT E. BEEBE, OF MAYVILLE, NORTH DAKOTA.

MARINE PROPULSION.

No. 876,133.

Specification of Letters Patent.

Patented Jan. 7, 1908.

Application filed June 25, 1907. Serial No. 380,737.

To all whom it may concern:

Be it known that I, ALBERT EDGAR BEEBE, a citizen of the United States, and a resident of Mayville, in the county of Traill and State of North Dakota, have invented certain new and useful Improvements in Marine Propulsion, of which the following is a specification.

My invention is an improvement in means for propelling vessels and consists in certain novel constructions and combinations of parts as will be hereinafter described and claimed.

In the drawings Figure 1 is a top plan view, parts being broken away of a boat provided with my improvements. Fig. 2 is a side view thereof. Fig. 3 is a detail vertical longitudinal section on about line 3—3 of Fig. 1. Fig. 4 is a detail perspective view illustrating one of the cross-bars for supporting the paddles. Fig. 5 is a detail section on about line 5—5 of Fig. 4, and Fig. 6 is a detail perspective view of one of the paddles, also illustrating the brace links connected therewith.

In carrying out my invention in connection with a boat body or hull A, which latter may be of any suitable construction, I provide cross shafts B and C mounted in suitable bearings and extending laterally beyond the hull A and provided on their lateral extensions on opposite sides of the hull with sprocket wheels D arranged in pairs and spaced apart to permit the operation between them of the paddle blades E. These paddle blades E are arranged in series, one series opening in one direction, and the other series opening in the reverse direction so the blades of one series may operate in propelling the boat A forward; and the blades of the other series in moving the boat to the rear, the blades of the series not in use in either instance folding against their carriers in the manner illustrated in Figs. 2 and 3 of the drawings. Sprocket chains F pass around the wheels D and are provided in two pairs, one pair on one side of the body A and the other pair on the other side of the body. Cross-bars G and G' extend between and connect the opposite sprocket chains of each pair. In connecting the cross-bars G with the sprocket chains I provide them at their opposite ends with T-heads H and I, the head H being integral with the cross-bar G and the head I being detachable, preferably by threading it on the end of the bar G, as will be understood from Fig. 4 of the draw-

ings. By this means the different parts pivoting on the cross-bars G may be applied thereto before the head I is screwed to place. These heads H and I lap against the inner side of the links of the sprocket chains and are secured thereto by the pins or bolts J which operate to secure the particular sprocket links to the adjoining ones as will be understood from Fig. 4 of the drawings. The cross-bars G' form pivotal supports for the inner edges of the paddle blades K and the cross-bars G which in general respects are like the cross-bars G' and of the construction illustrated in Fig. 4, forming a pivotal connection for one end of the stays L, which operate to hold the paddle blades K in position for use when the said blades are extended, as illustrated in Fig. 2. These stays L are made in two sections pivoted together at their meeting ends and at their other ends, respectively, to the paddle blades K and on the cross-bars G.

As shown in Figs. 1, 2 and 3, the stays L connect with the paddle blades between their inner and outer edges, while in the construction shown in Fig. 6, the said stays connect the paddle blades near the outer edges of said blades. Manifestly the point of connection may be varied as found desirable in the practical use of the invention.

As shown in Figs. 2 and 3, the stays L extend from their respective paddle blades rearwardly with respect to the direction of the boat, when such paddle blade is operating as a propeller, so the stays will firmly hold the paddle blades in position for operation. At the same time the stays being made in sections, permit the folding of the blades in rounding the sprocket wheels D and in passing from end to end on the upper run of the sprocket wheels. Connecting rods M and N extend between the adjacent cross-bars G and G' and operate to brace the endless propeller, and to relieve in a measure the strain from the sprocket chains. As shown in Fig. 4, the connecting rods M and N may be secured in proper position between the sprocket chains by means of spacing tubes or sleeves O fitted on the cross-bars G and G', as shown. On the connecting rods are mounted the stop projections P, upon which the paddle blades E rest when lowered to the position shown in the upper part of Fig. 2 of the drawings. These stop projections may preferably be in the form of wheels or rollers mounted on tracks Q in the bars N, as shown and they op-

erate to hold the paddle blades at such an angle that they will readily open to operate on the water in the manner desired.

For driving the propeller, any suitable power, engine or otherwise may be employed, or in small boats they may be driven by hand, by means of the shaft R having a sprocket wheel S and handles T and geared by the chain U with the sprocket pinion V on the shaft B, as will be understood from Figs. 1 and 2 of the drawings.

The construction is simple, easily applied to boats, can be easily operated and will be found efficient in propelling boats, as desired.

Manifestly the improvements may be applied to large or small boats wherever desirable.

As best shown in Fig. 1, it will be noticed the paddle blades operate between their respective sprocket chains, and may be opened and closed between the said chains in the operation of the invention.

I claim—

1. The combination substantially as herein described of the hull, the shafts journaled thereto, and extending laterally beyond the hull, means for driving one of the shafts, sprocket wheels arranged in pairs on the said shafts on opposite sides of the hull, sprocket chains around the sprocket wheels, cross-bars having at their ends T-heads, one of which is detachable from the cross-bar, means for securing these T-heads to links of the sprocket chains, brace rods extending between the adjacent cross-bars, paddle blades pivoted at their inner edges to their respective cross-bars and arranged in series, the blades of one series opening in one direction and those of the other series opening in the reverse direction, stays extending between said paddle blades and adjacent cross-

bars, and made in sections whereby they may be folded in the closing of the paddle blades, and stop devices on the brace rods for engagement by the paddle blades when closed, all substantially as and for the purpose set forth.

2. A propeller comprising opposite sprocket chains, sprocket wheels receiving the same, cross-bars between the opposite sprocket chains, brace rods between the cross-bars in the direction of length of the sprocket chains, paddle blades pivoted to their respective cross-bars, stays made in sections pivoted together and pivoted at one end to the paddle blades and at their opposite ends to their respective cross-bars, and stops for limiting the closing movement of the paddle blades and mounted on the brace rods, substantially as set forth.

3. The combination with the sprocket chains arranged in pairs, of cross-bars between the sprocket chains, paddle blades pivoted to their respective cross-bars, stay devices for the paddle blades and connecting the same with adjacent cross-bars, and brace rods between the cross-bars, substantially as set forth.

4. A propeller comprising a pair of parallel sprocket chains, having links and pivot pins, cross-bars having at their ends T heads one of each pair of such heads being detachable from its cross-bar, and the said heads being secured to the links of the sprocket chains by the pivot pins of said chains, paddle blades carried by the cross-bars and stay devices for the paddle blades, substantially as set forth.

ALBERT E. BEEBE.

Witnesses:

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PERRY B. TURPIN.