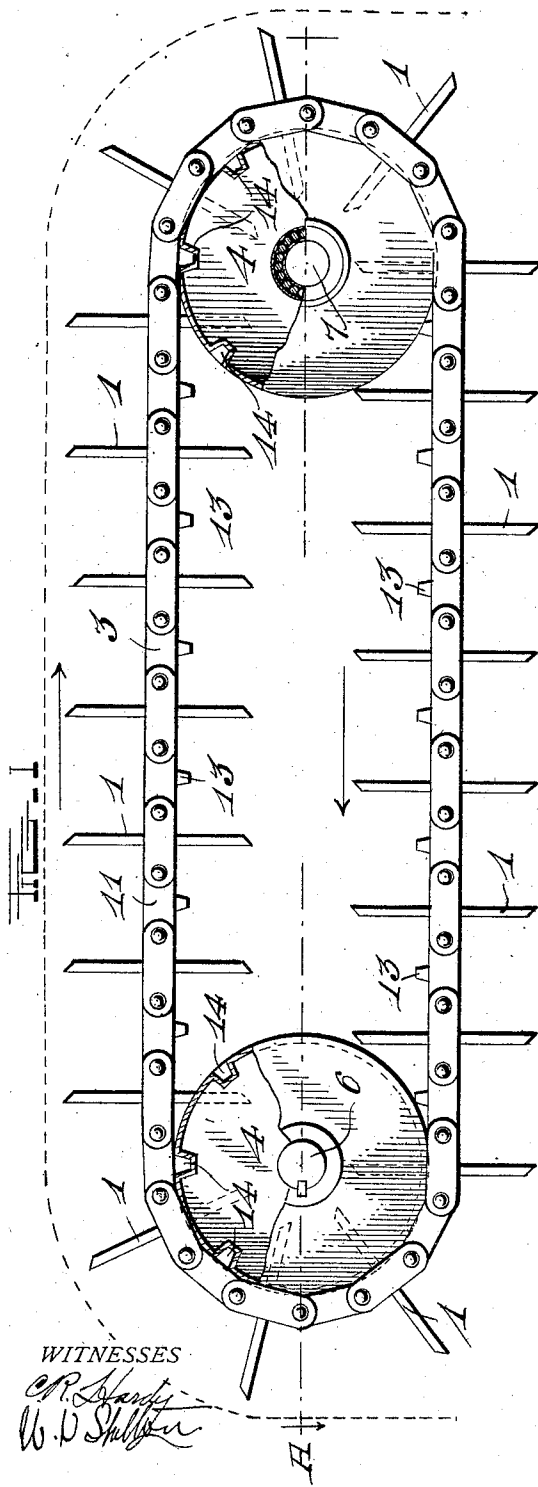


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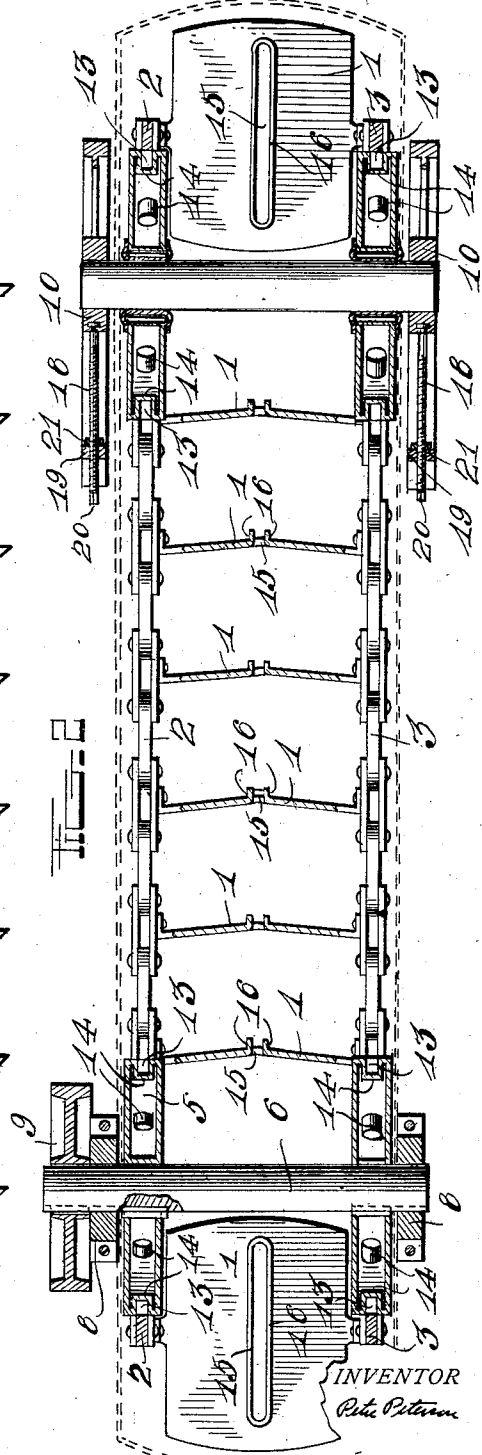
P. PETERSON.
MARINE PROPULSION.
APPLICATION FILED APR. 20, 1912.

Patented Dec. 17, 1912.

2 SHEETS—SHEET 1.



WITNESSES
C. R. Hardy
W. D. Sullivan



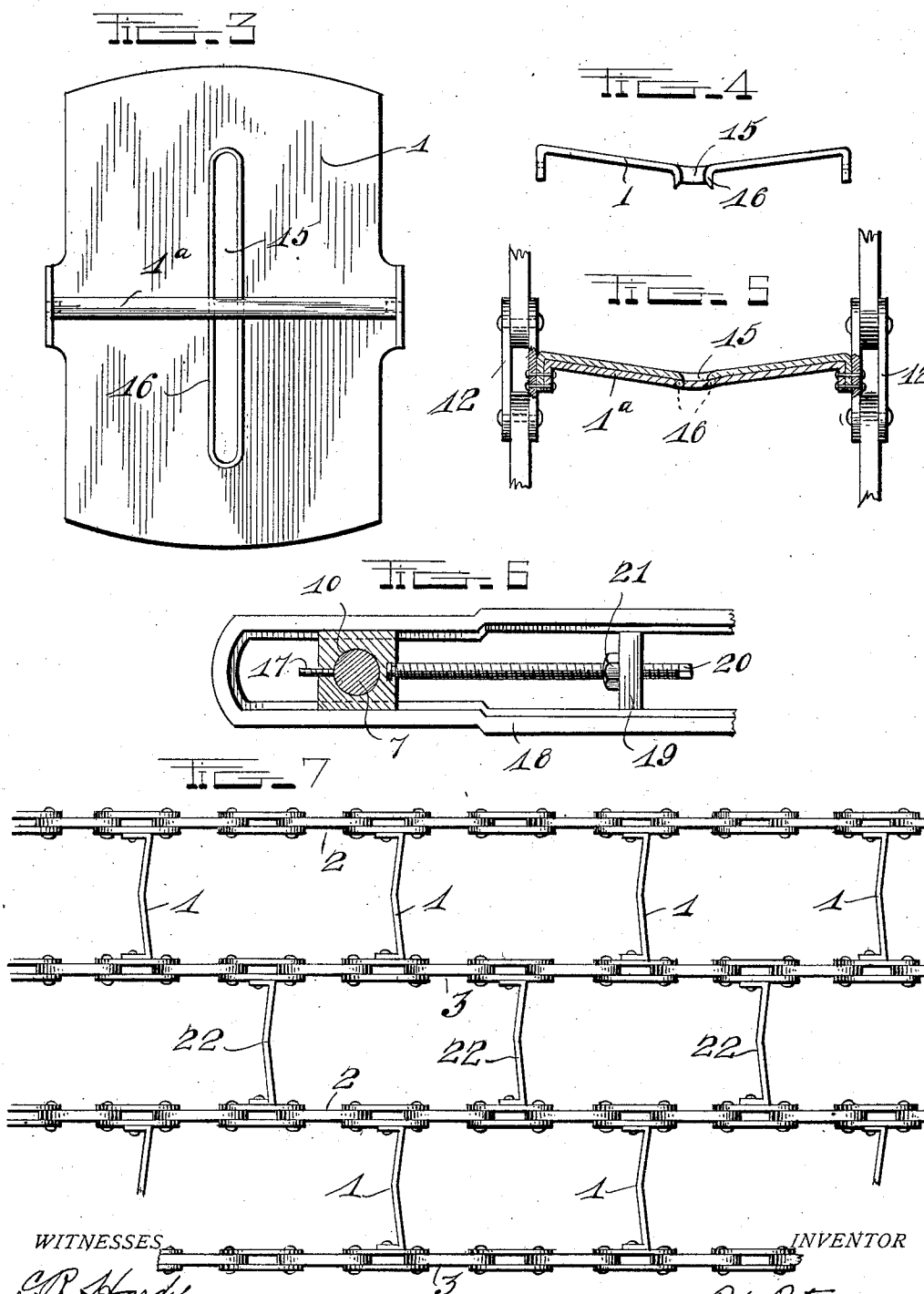
INVENTOR
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By his Attorney
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

PETER PETERSON, OF SAN FRANCISCO, CALIFORNIA.

MARINE PROPULSION.

1,047,562.

Specification of Letters Patent.

Patented Dec. 17, 1912.

Application filed April 20, 1912. Serial No. 692,155.

To all whom it may concern:

Be it known that I, PETER PETERSON, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented new and useful Improvements in Marine Propulsion, of which the following is a specification.

This invention relates to improvements in marine propulsion, and more particularly to endless chain propellers.

It is the object to provide an endless chain propeller for power driven boats to produce more speed for a given horse-power, and consists in certain novel constructions hereinafter described.

The preferred forms of this invention are illustrated upon the accompanying sheets of drawings, yet it is to be understood that minor detail changes may be made without departing from the scope thereof.

Figure 1 is a view in side elevation with parts broken away, illustrating the embodiment of this invention. Fig. 2 is a view in horizontal section taken on the line A—B of Fig. 1. Fig. 3 is an enlarged detail view of a propeller blade in end elevation. Fig. 4 is a top plan view of Fig. 3. Fig. 5 is a detail view of a blade and connection to the chain. Fig. 6 is an enlarged detail view in side elevation of the adjusting means. Fig. 7 is a plan view of a modified form of propeller.

The endless chain propeller constructed in accordance with this invention may be mounted either on the sides of a boat or in a tunnel upon the bottom thereof.

The propeller blades 1 are carried between chains 2 and 3 on each side thereof, which pass over wheels or sprockets 4 and 5 mounted upon shafts 6 and 7 at each end. The form as illustrated is adapted to be mounted in a tunnel in the bottom of the boat and the outline of the tunnel is indicated by dotted lines in Figs. 1 and 2.

The sprocket or wheel shaft 6 at one end is mounted to rotate in fixed bearings 8 and is provided with a pulley or gear wheel 9 whereby power is transmitted from a suitable source to the endless chain. The other sprocket or wheel shaft 7 is secured to adjustable blocks 10 whereby the tension upon the chain may be regulated. The sprockets or wheels 4 and 5 at one end are keyed to their shafts 6 and rotatable therewith, while the sprockets or wheels 4 and 5 at the other

end rotate upon roller bearings about their shafts 7.

The chains 2 and 3 are composed of alternate single and double links 11 and 12 with the single links 11 embraced at each end between the members of the double link 12 and pivotally secured therebetween. Each single link 11 is provided with a central depending lug or spur 13. The periphery of each of the four sprockets or wheels 4 and 5 is provided with recesses 14 adapted to receive the lugs or spurs 13.

The propeller blades 1 are secured to the center of the inner members of the double links 12 and are preferably of less width than length with slightly curved ends. Each blade is provided with an elongated central opening 15 surrounded by a rearwardly extending flange 16. As the blade moves through the water this flange opening directs a current of water directly toward the rear from the center of the blade which prevents the suction otherwise caused by the eddying of the water about the edges of the blade. It is preferable to construct the blades 1 indented in the direction of travel with their sides sloping rearwardly toward the central opening 15 to form in effect a bucket and thereby add to the power of the blades. To strengthen the blade 1 a central horizontal brace 1^a conforming to the shape of the blade is arranged at the rear side and secured to the chain link engaging portion of the blade.

The adjustable blocks 10 are preferably secured to the shaft 7 by a set screw 17 and each block is mounted to slide in a fixed frame 18. On the side facing the power driven shaft 6 a rigid bracket 19 is secured to the frame 18 through which passes a screw threaded shaft 20 and rotatably engages the adjusting block 10. The free end of the screw threaded shaft is provided with a square end or tool engaging surface whereby the tension on the block 10 may be adjusted by the application of a wrench or other tool, and on the other side of the bracket is mounted a lock nut 21 for securing the block after adjustment.

The form illustrated in Fig. 1 includes a single series of blades 1 between the chains 2 and 3, however, as many series may be united as desired. In Fig. 6 two sets of blades 1 between two sets of chains 2 and 3 are employed with a third set of blades 22 secured between the adjacent chains 2 and 3.

In this form it is preferable to mount the blades 1 and 22 in staggered relation and also secure the blades in each series to every other double link 12, so that each double link in the inner chain 3 and 2 supports a blade first on one side and then on the other side of the chain.

What I claim is:—

1. An endless chain propeller comprising blades supported between chains mounted to travel over sprockets or wheels, said chains comprising alternate double links having alternate single links pivoted therebetween, each single link provided with a depending lug adapted to engage each sprocket or wheel.

2. An endless chain propeller comprising blades supported between chains on each side thereof mounted to travel over sprockets or wheels, each blade provided with an elongated central opening, and the walls of the

blades rearwardly inclined to the sides of the opening.

3. An endless chain propeller comprising two or more series of blades supported between chains on each side thereof, and another set of blades supported between the adjacent chains of each series, all mounted to travel over sprockets or wheels.

4. An endless chain propeller comprising two or more series of blades supported between chains on each side thereof, and another set of blades supported between the adjacent chains of each series, the blades of each series being mounted in staggered relation to the other series, all mounted to travel over sprockets or wheels.

PETER PETERSON.

Witnesses:

J. NELSON,
E. LAGER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."