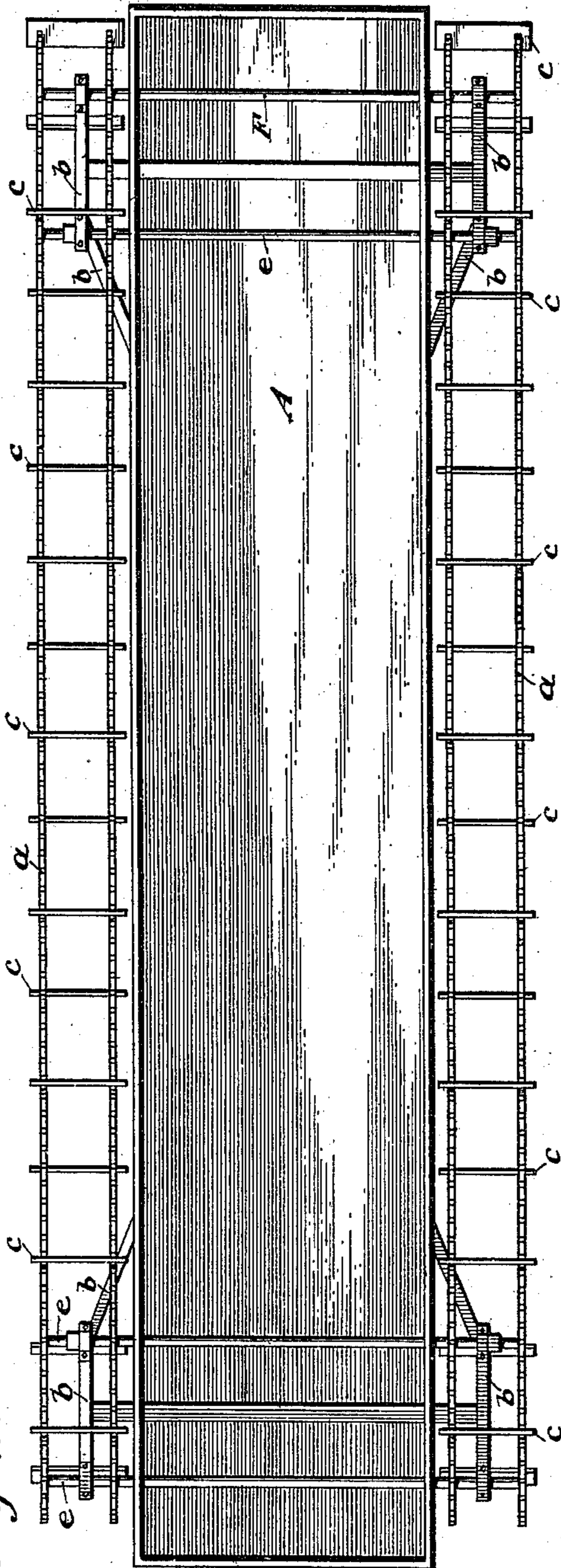


AQUAPLANE.

989,604.

Patented Apr. 18, 1911.



William Tormey  
J. Spaulding

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# UNITED STATES PATENT OFFICE.

SAMUEL M. HOWARD, OF GETTYSBURG, SOUTH DAKOTA.

## AQUAPLANE.

989,604.

Specification of Letters Patent.

Patented Apr. 18, 1911.

Application filed October 25, 1909. Serial No. 524,588.

*To all whom it may concern:*

Be it known that I, SAMUEL M. HOWARD, a citizen of the United States, residing in the city of Gettysburg, Potter county, State of South Dakota, which is my post-office address, have invented a new and useful Aquaplane, of which the following is a specification.

This invention relates to improvements in propelling boats and more particularly to a device which for convenience may be denominated an aquaplane.

The primary object of the present invention is to provide means whereby the speed and efficiency of the boat in its movement through shallow or deep water will be increased to the maximum.

Another object is to provide a hull or body having a plurality of movable endless chains carrying the propeller blades, and traversing sprockets supported at the ends of the hull, said chains being driven through the medium of a suitable engine located in the hull body.

With the above and other objects in view, the invention consists of the novel features of construction and the combination and arrangement of parts hereinafter fully described and claimed and illustrated in the accompanying drawings in which—

Figure 1 is a side elevation of an aquaplane embodying my improvements, and Fig. 2 is a top plan view thereof.

Referring more particularly to the drawings, A designates the hull or body in each end of which parallel transverse shafts *e*, F are rotatably mounted. The shaft F is positively connected and driven by means of a suitable engine not shown in the drawing mounted in the end of the hull or body A. Upon the ends of each of the shafts F, spaced sprocket wheels D are secured, and to the ends of the other shafts *e*, the idler sprockets *d* are secured. The sprockets *d* at one end of the hull are of smaller diameter than those at the other or forward end thereof, at which point the power is applied. The sprocket chains *a*, traverse the sprockets D and pass under the smaller idler sprockets *d*. These idlers are provided for the purpose

of effecting a vertical edge-wise movement to the propeller blades *c*, through the water as the hull moves over the surface thereof. These paddles or propellers *c*, may be secured to the sprocket chains *a* in any suitable manner, but as shown in the accompanying drawings, the chains are provided with lugs at intervals to which the propeller blades are securely fastened.

The ends of the shafts *e*, F, upon which the sprockets are arranged are braced and supported by means of the frames *b* arranged upon each side of the hull of the vessel. Owing to the fact that the propeller plates *c* are moved edge-wise through the water as they emerge therefrom, it will be obvious that the additional resistance which would be imparted to the movement of the blades if the width of the blades were presented to the water current, is entirely eliminated. It therefore follows that the speed of the vessel will be proportionately increased.

From the foregoing it is believed that the construction and operation of my invention will be readily understood. The provision of the movable sprocket chains at either side of the vessel and the arrangement of the propeller blades thereon, will rapidly force the vessel through the water and reduce the resistance of the water to the progress of the vessel to a minimum.

While I have particularly shown and described the preferred construction and arrangement of the various parts, it will be obvious that the same may be greatly varied without materially departing from the essential features or sacrificing any of the advantages involved in the invention.

I claim:

In a device of the character described, the combination with a hull or body, of a pair of transverse spaced parallel shafts rotatably mounted in the sides of said body at each end thereof, the shafts at each end of the body being arranged in different vertical planes and extending beyond the sides of the body, supporting frames for the ends of the shafts fixed to the sides of said body, spaced sprockets fixed upon the ends of each shaft, endless chains traversing the sprockets on

the upper shafts, a plurality of transversely disposed blades arranged in parallel relation upon each pair of chains on opposite sides of the hull, the lower sprockets at each end  
5 of the hull engaging the lower stretches of said chains, said chains extending between the lower and upper sprockets at an angle of less than thirty degrees whereby an edgewise

vertical movement of the blades as they emerge from the water is effected. 10

Dated at Gettysburg, Potter county, South Dakota, April 6, 1909.

SAMUEL M. HOWARD.

Witnesses to signature:

W. W. PROVUS,

WILLIAM TOOMEY.

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