

(No Model.)

5 Sheets—Sheet 1.

J. F. BREYER.  
AQUATIC VELOCIPED.

No. 485,369.

Patented Nov. 1, 1892.

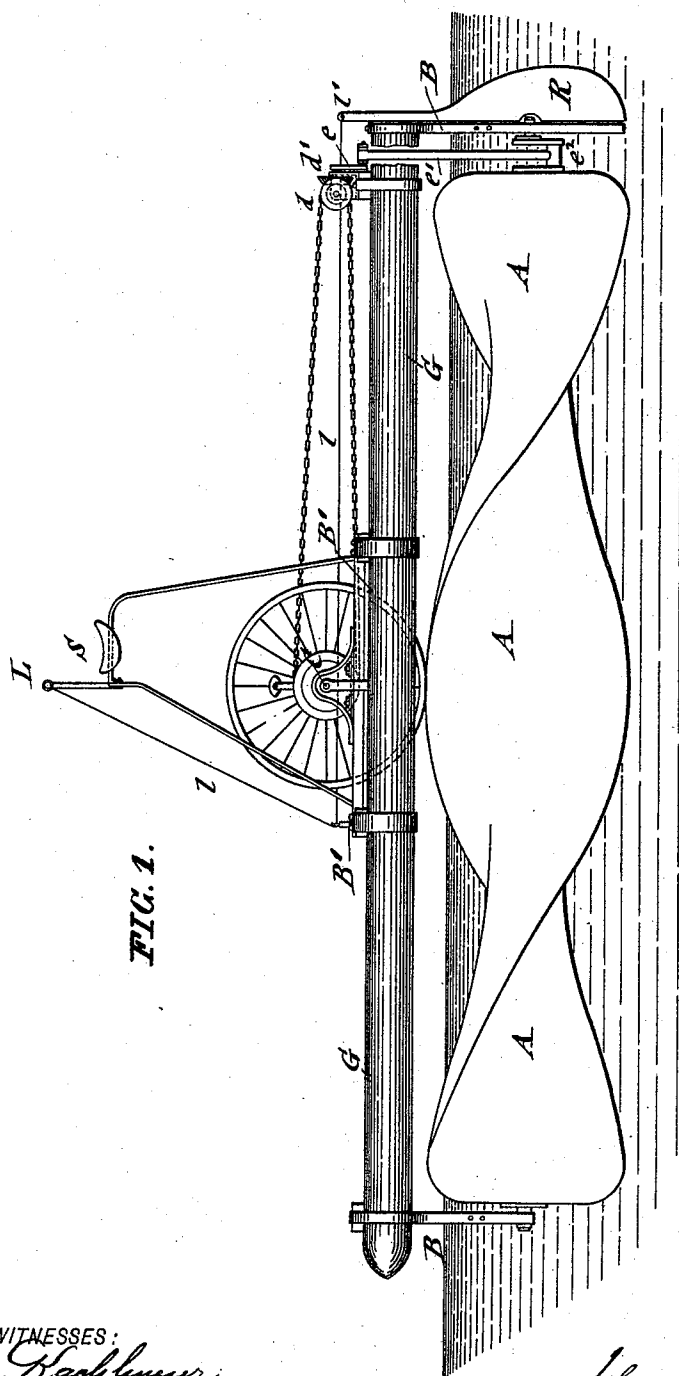


FIG. 1.

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INVENTOR

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(No Model.)

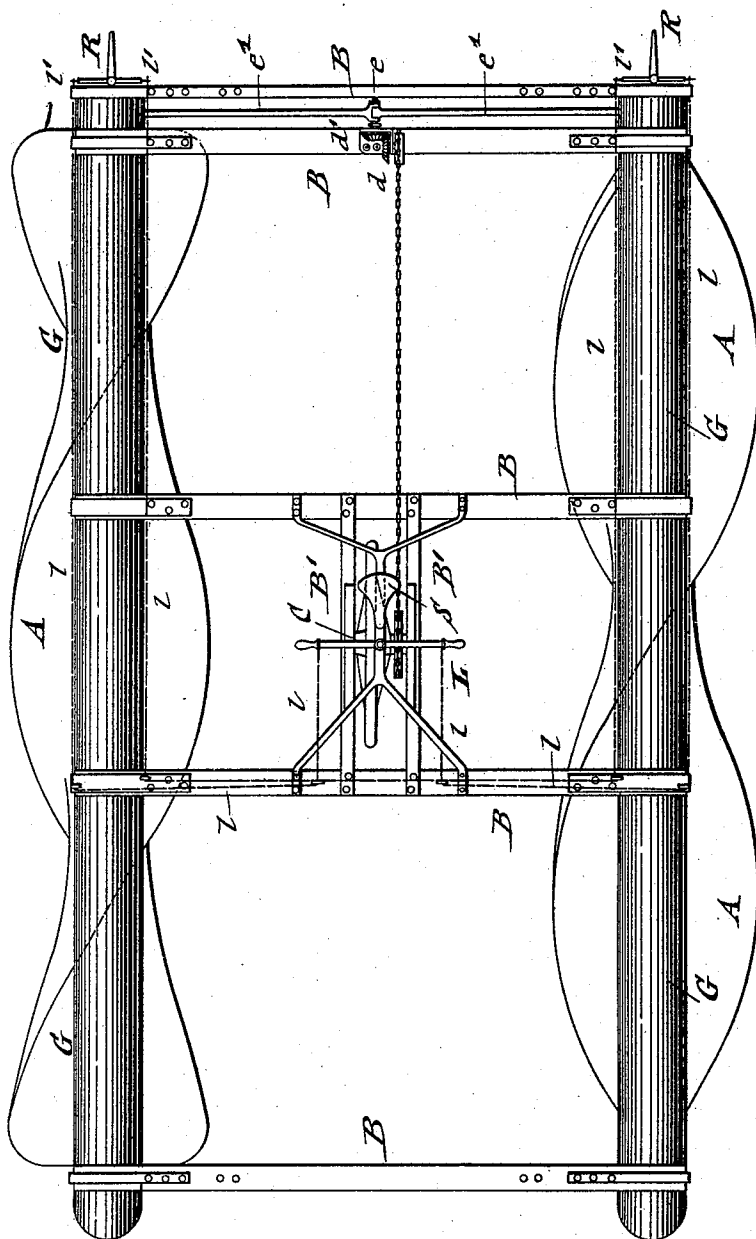
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FIG. 2.



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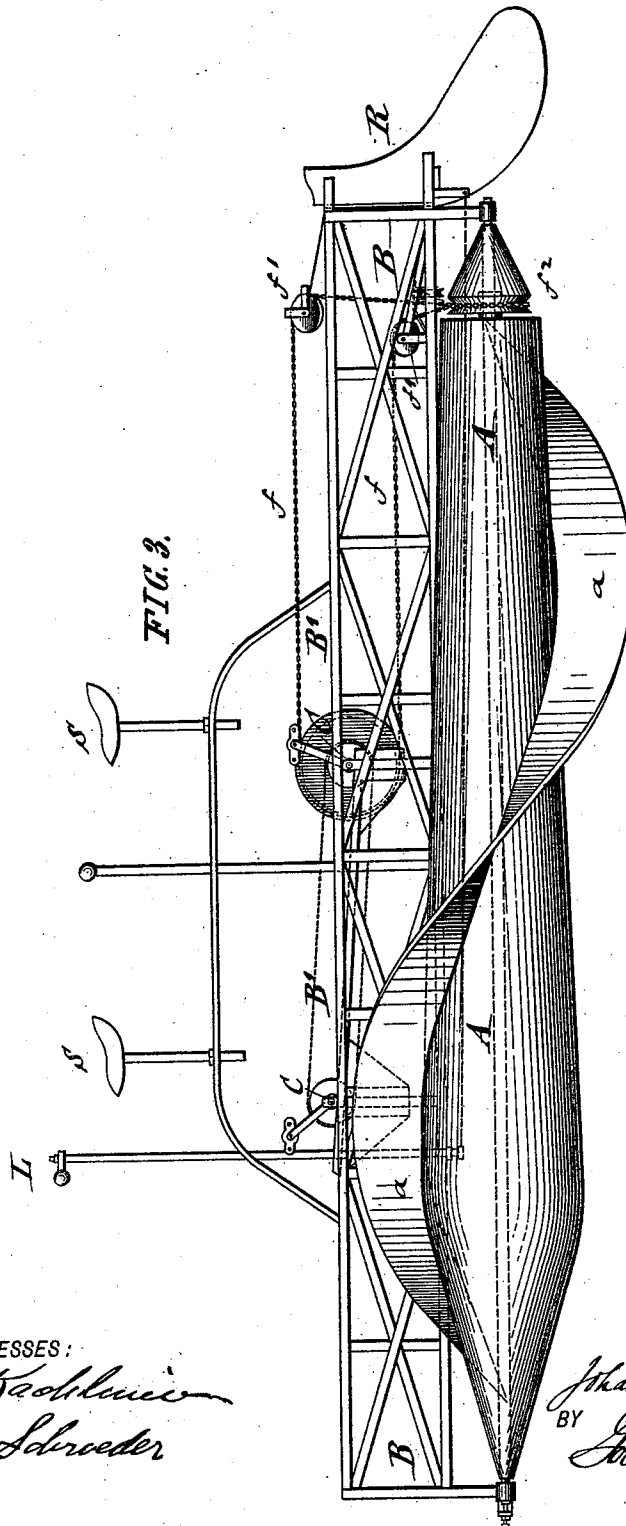
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No. 485,369.

Patented Nov. 1, 1892.



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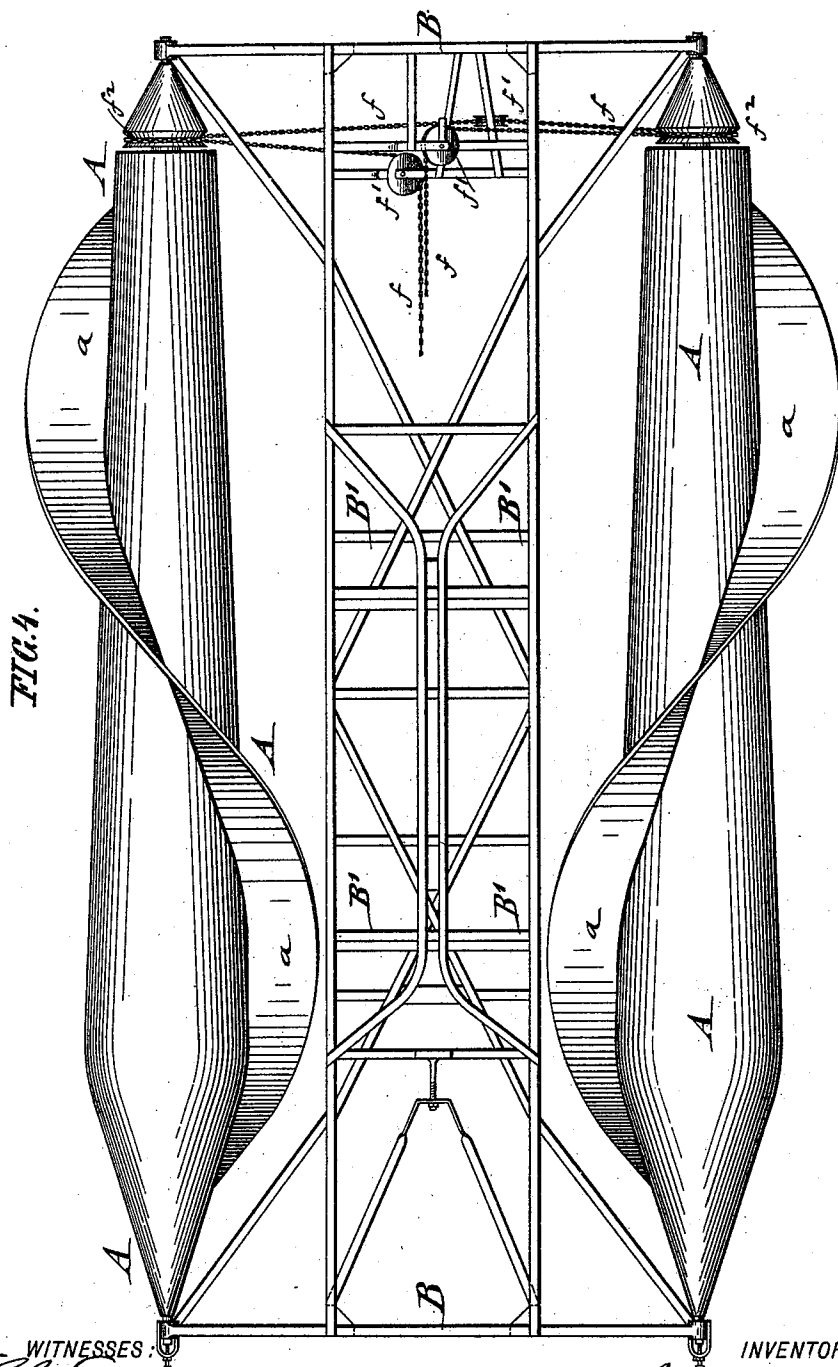
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No. 485,369.

Patented Nov. 1, 1892.



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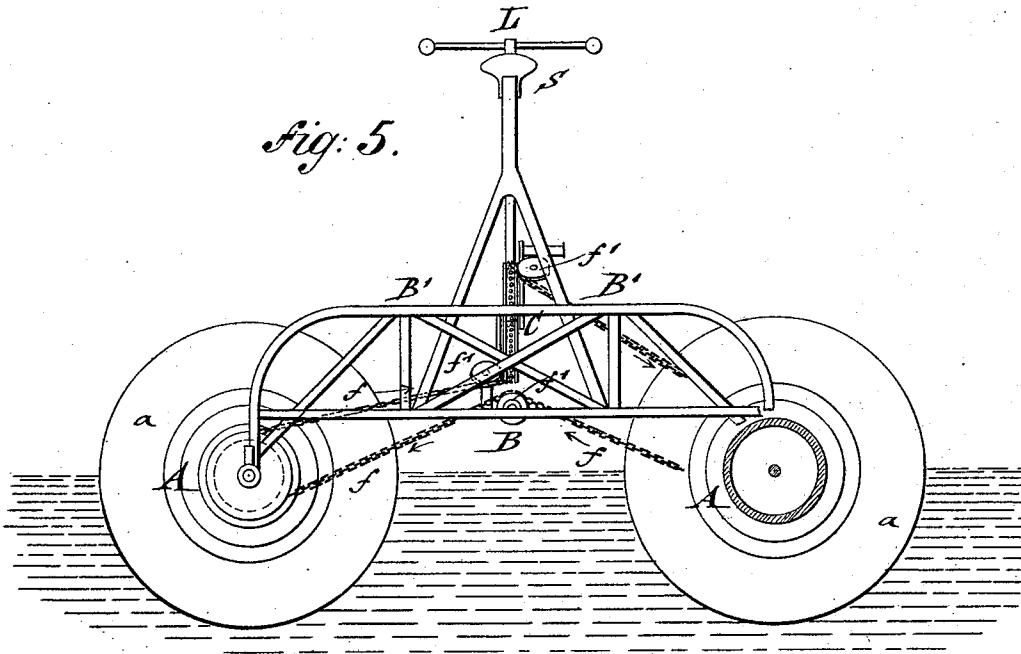
5 Sheets—Sheet 5.

J. F. BREYER.  
AQUATIC VELOCIPÈDE.

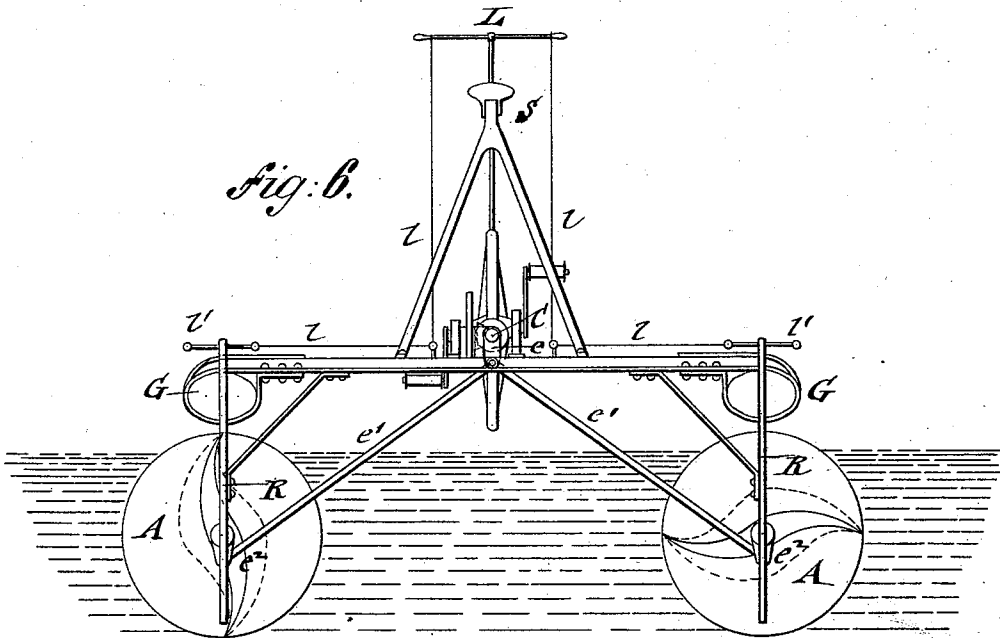
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*Fig. 5.*



*Fig. 6.*



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# UNITED STATES PATENT OFFICE.

JOHANNES FR. BREYER, OF HAMBURG, GERMANY.

## AQUATIC VELOCIPEDE.

SPECIFICATION forming part of Letters Patent No. 485,369, dated November 1, 1892.

Application filed November 27, 1891. Serial No. 413,357. (No model.) Patented in Germany September 21, 1890, No. 56,324.

*To all whom it may concern:*

Be it known that I, JOHANNES FR. BREYER, a citizen of the United States of Brazil, residing at Hamburg, in the Empire of Germany, have invented certain new and useful Improvements in Aquatic Velocipedes, (for which Letters Patent were granted to me in Germany, No. 56,324, dated September 21, 1890,) of which the following is a specification.

This invention relates to an improved aquatic velocipede that can be readily operated in the nature of a cycle by one or more persons, the motion of the legs being transmitted by suitable driving mechanism to hollow screw-bodies, by which the forward propulsion of the velocipede is produced.

The invention consists of an aquatic velocipede which comprises two parallel hollow screw-bodies which turn in bearings of a transverse connecting-frame on which the seat or seats for the person or persons operating the velocipede are arranged. The motion of the pedals operated by the person or persons is transmitted by suitable driving mechanism to the hind parts of the screw-bodies, so that they are rotated on their axes and thereby propelled through the water. The steering mechanism is operated by one of the persons that propel the structure, which steering mechanism operates rudders at the rear ends of the screw-bodies, above which hollow longitudinal floats are arranged for preventing the tilting and capsizing of the structure, as will be fully described hereinafter, and finally pointed out in the claims.

In the accompanying drawings, Figure 1 represents a side elevation of my improved aquatic velocipede. Fig. 2 is a plan of the same. Figs. 3 and 4 are a side elevation and a partial plan of a modified construction of the velocipede. Fig. 5 is a rear elevation, partly in section, of the structure shown in Fig. 3; and Fig. 6 is a rear elevation of the structure shown in Fig. 1.

Similar letters of reference indicate corresponding parts in all the figures.

Referring to the drawings, A represents two parallel hollow screw-bodies, which are made of light sheet metal and either made in the shape of helically-twisted propelling-screws or of hollow cigar-shaped bodies on which helical wings forming blades  $\alpha$  are ar-

anged, as shown, respectively, in Figs. 1 and 3. The axles of the screw-bodies A A are supported in front and rear bearings of a transverse connecting-frame B, on which a central longitudinal platform B' at a suitable height above the screw-bodies is arranged. On the central platform B' are supported one or more seats S for the person or persons who propel the structure. There are also arranged in suitable bearings of the platform B' one or more crank-shafts C, which are provided with pedals C', which are operated by the persons. By a chain-and-sprocket-wheel transmission the motion of the crank shaft or shafts C is transmitted to a bevel gear-wheel  $d$ , supported in bearings at the rear part of the frame B and from the same to a second bevel-wheel  $d'$ , having a crank  $e$ , which is connected by crank-rods  $e'$  to cranks  $e^2$  on the rear ends of the axles of the screw-bodies, as shown in Figs. 1, 2, and 6. By turning the driving crank-shaft by the pedals rotary motion is imparted by the intermediate driving mechanism to the propelling screw-bodies. The speed of the water-velocipede is dependent on the pitch of the screw-bodies A or of the wings or blades  $\alpha$  on the same and on the number of rotations imparted to said bodies. The screw-bodies A may also be propelled directly by an endless driving-chain  $f$ , which is guided over pulleys  $f'$  and over pulleys  $f^2$  at the rear ends of the screw-bodies A, as shown in Figs. 3, 4, and 5. When hollow twisted screw-bodies A are used, which are almost entirely submerged by the weight of the superstructure, it is necessary to arrange longitudinal floats G of sheet metal above the screw-bodies A, which floats are attached to the supporting-frame B and which serve for the purpose of preventing the tilting and capsizing of the structure when getting on or off the same. These floats may be dispensed with when the screw-bodies A are large enough, so that they are only submerged to about their middle portions, as in the construction shown in Figs. 3, 4, and 5, in which the hollow screw-bodies have sufficient buoyancy to support the superstructure and prevent the tilting and capsizing of the same.

The steering of the water-velocipede is produced by means of a steering-lever L, that is arranged in front of the seat of the driver and connected by suitably-guided chains or

wire cords *l* with transverse arms *l'* at the upper ends of the rudders *R*, which are arranged at the rear ends of the screw-bodies *A*, so that thereby the velocipede can be readily steered  
5 by the person or persons propelling the same. The velocipede may also be propelled by a suitable motor when the same is constructed on a larger scale and intended for a greater number of persons.

10 My improved aquatic velocipede enables a pleasant and healthy water sport. It can be built for any number of persons, is not liable to tilt or capsize, and can be propelled at considerable speed and with ease and facility.

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

1. In an aquatic velocipede, the combination of parallel screw-propellers, floats connected by arms to said propellers, a transverse frame connected to said floats, a seat on said frame, cranks connected to the end of said propellers, bevel-gears on the end of said frame, one of said gears being provided with  
20 a crank, rods connecting the bevel-gear crank with a crank on the propeller, and means for rotating said gears.

2. In an aquatic velocipede, the combina-

tion of parallel screw-propellers, floats connected by arms to said propellers, a transverse frame connected to said floats, a seat on said frame, cranks connected to the end of said propellers, bevel-gears on the end of said frame, one of said gears being provided with a crank, rods connecting the bevel-gear crank  
35 with a crank on the propeller, means for rotating said gears, and steering mechanism connected to said frame.

3. In an aquatic velocipede, the combination of parallel screw-propellers, floats connected by arms to said propellers, a transverse frame connected to said propellers, a rudder attached to said frame, seats on said frame, a steering-bar also on said frame connected by suitable mechanism to a rudder, a  
45 sprocket-wheel on said frame, and mechanism connecting said sprocket-wheel with said propellers.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

JOH. FR. BREYER.

Witnesses:

E. G. BUCK,

M. NOOTBAAR.