Sept. 29, 1931. R. J. ROBERTSON 1,825,363

WATER PLANE

Filed May 27, 1929 2 Sheets-Sheet 1

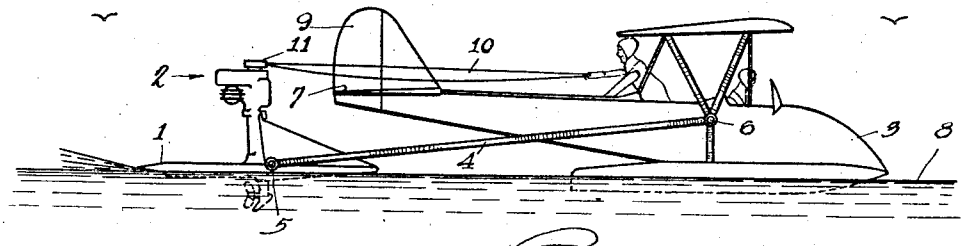


Fig. 1.

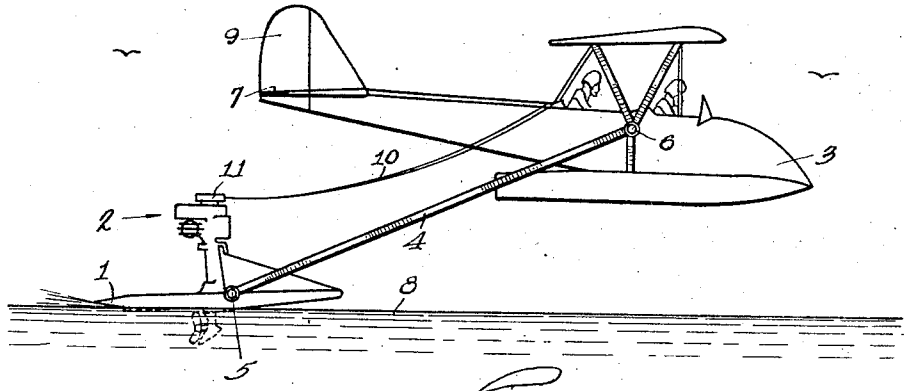


Fig. 2.

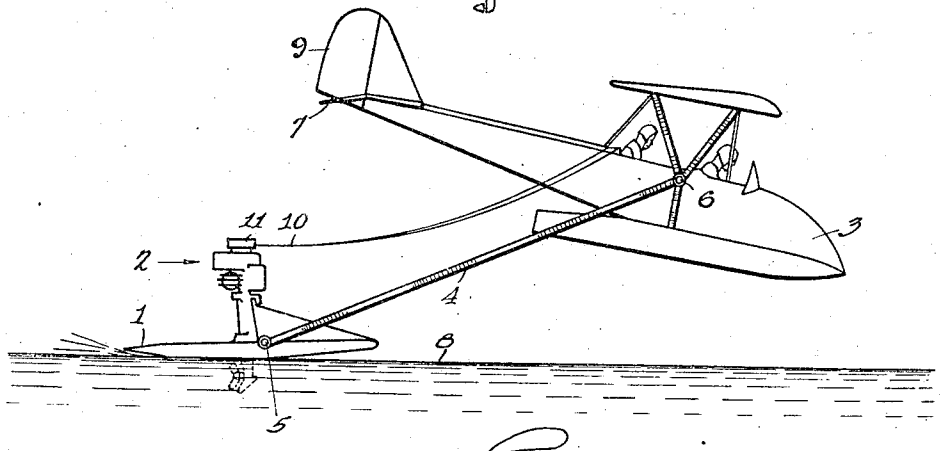


Fig. 3.

INVENTOR.
RUSSELL J. ROBERTSON.
BY
Munn & Co.
ATTORNEYS.

Sept. 29, 1931. R. J. ROBERTSON 1,825,363

WATER PLANE

Filed May 27, 1929 2 Sheets-Sheet 2

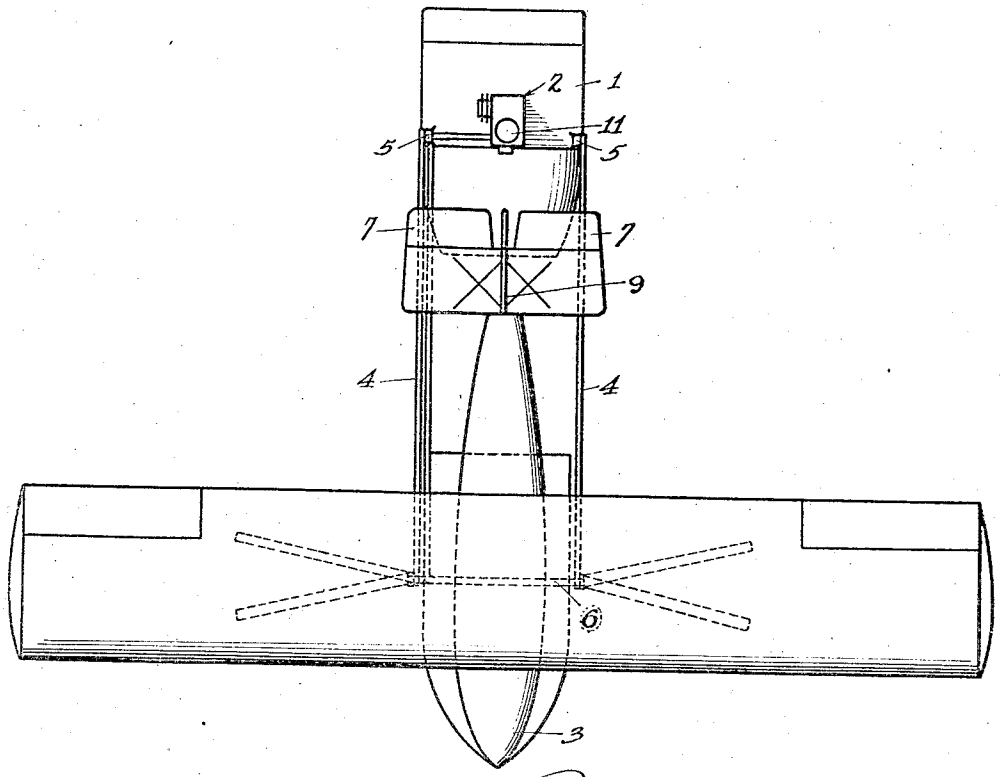


Fig. 4.

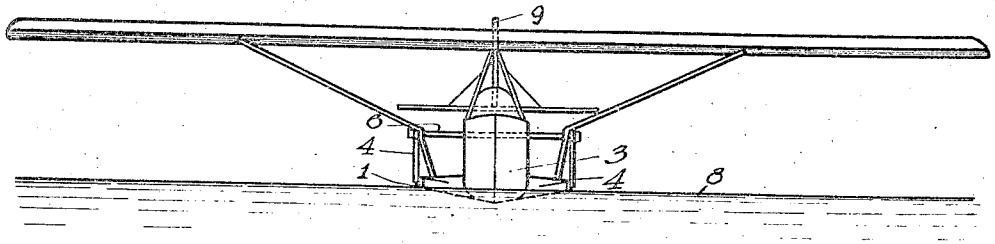


Fig. 5.

INVENTOR.
RUSSELL J. ROBERTSON.

BY Munn & Co.

ATTORNEYS.

Patented Sept. 29, 1931

1,825,363

UNITED STATES PATENT OFFICE

RUSSELL J. ROBERTSON, OF OAKLAND, CALIFORNIA, ASSIGNOR OF ONE-HALF TO MILTON S. ROBERTSON, OF ALAMEDA, CALIFORNIA

WATER PLANE

Application filed May 27, 1929. Serial No. 366,408.

My invention relates to improvements in water planes, and it consists in the combinations, constructions and arrangements hereinafter described and claimed.

The principal object of my invention is to provide a water plane which is prevented from clearing the water more than a few feet but which may be flown in exactly the same manner as a sea plane within the limits of the surface of the water and a few feet above the water. The plane is not provided with a motor, but is propelled by a small boat or sled that is provided with a source of power such as an outboard motor. The sled is connected to the water plane by rigid arms that are pivoted to the plane and to the sled. The arms propel the plane while in the water or while in the air.

A further object of my invention is to provide a device of the type described which will give the same thrills as actually flying a sea plane without the attendant risk and which is far less expensive to buy and operate than a standard sea plane which carries its own power plant.

Other objects and advantages will appear as the specification proceeds, and the novel features of the invention will be particularly pointed out in the claims.

My invention is illustrated in the accompanying drawings, in which

Figures 1 to 3 inclusive show side elevations of the device with the sea plane in various positions with respect to the motor sled;

Figure 4 is a top plan view of the device; and

Figure 5 is a front elevation.

In carrying out my invention I provide a sea sled 1 to which is attached a power plant such as an outboard motor indicated generally at 2. A sea plane 3 of light construction and capable of carrying two people is connected to the sled 1 by means of rigid arms 4. These arms are pivotally secured to the sled at 5 and to a cross bar 6 (see Figure 5) carried by the water plane 3. The arms 4 are pivotally connected to the water plane and to the sled so as to permit the pilot in the water plane to manipulate the elevators 7 for causing the sea plane to lift clear of the water 8 when it has attained a sufficient speed. The plane can be kept aloft because it will continue to be propelled by the arms 4 in the manner shown in Figure 2. The rudder 9 of the plane may be actuated together with the elevators 7 for causing the plane to rise and fall and be steered in much the same manner as if disconnected from the sled 1.

Should the plane be lifted to such a height as to descend in back of the sled 1, the arms 4 are made long enough to prevent the front of the plane from striking the sled.

I show means for starting the outboard motor while the passengers are in the plane. A cord 10 extends from the plane 3 back to a flywheel 11 carried by the outboard motor 2. The cord may be previously wrapped around the lower portion of the flywheel in the usual manner, and then the passenger may give a quick pull on the cord 10 as shown in Figure 1 for starting the motor. The motor is automatically in operation and will soon propel the sled and water plane at a speed sufficient to permit the pilot to lift the plane clear of the water. If desired, the gas and spark control for the motor may be extended up one of the arms 4 to the fuselage where they may be reached by the pilot for controlling the speed of the motor.

The device may be used for teaching students to fly without undue danger. The plane has all the flying qualities of any other plane without the high speed or altitude dangers. The plane will take off at a low speed because it has less weight to lift, and it also has a low landing speed because the engine and the fuel are not carried by the plane but by the propelling board or sled 1.

The method of propulsion afforded by the two arms 4 permits the pilot to have perfect control of his plane with a freedom of movement in all directions. The arms 4 are connected to the plane at the center of gravity. This gives the plane the same flexibility as if it were flying in the usual manner. It will further be noted that in actual flying the arms 4 give an upward thrust as well as a forward one. This has the advantage of helping to sustain the plane in flight.

It is also possible to attain a greater speed on the water because the wings will tend to support the weight of the plane and to make it ride the surface of the water. There is, of course, less resistance to air than to water. It is not necessary to steer the sled, because the turning of the airplane by means of the elevators and rudder will turn the sled with it. This is due to the fact that the plane and the sled are connected together by the arms 4. It should also be noted that the plane will ride far more smoothly than a standard airplane, because it is not subject to the vibration of the motor. This vibration is carried by the sled. The arms are of such a length as to permit the tail of the plane to project over the sled when the plane is resting on the water. This permits access to the sled to adjust the motor if desired.

Although I have shown and described one embodiment of my invention, it is to be understood that the same is susceptible of various changes, and I reserve the right to employ such changes as may come within the scope of the invention as claimed.

I claim:

1. An aircraft propelling device comprising a movable vessel, rigid arms pivoted to said vessel and being pivoted to an aircraft at its center of gravity and adapted to aid in lifting the latter during flight.

2. A glider and means for pushing the glider and comprising a movable device, and arms connecting the device with the glider for permitting the latter to soar above the supporting surface while still being pushed, said arms being long enough to permit the glider to swing entirely over the top of said propelling means and to come to rest in back of it.

3. A glider and means for pushing the glider and comprising a movable device, said device being a separate propelling unit, and rigid arms connecting the device with the glider for permitting the latter to soar above the supporting surface while still being pushed, said arms being connected to said glider at its center of gravity.

4. A seaplane glider, a vessel movable in the water, and arms connecting the vessel with the glider for pushing the glider, manually-controlled means for lifting the glider out of the water when the glider attains sufficient speed, said arms aiding in supporting the glider while flying.

5. An engineless seaplane, a boat, means carried by said boat for moving it through the water, arms connecting the boat with the seaplane for disposing the seaplane in advance of the boat, manually-controlled means for lifting the seaplane out of the water when it attains the desired speed, means for steering the seaplane, said arms turning the boat in the same direction as the seaplane.

6. An aircraft propelling device comprising a self-powered member, an engineless aircraft, and means permanently connecting the aircraft at its center of gravity with the member for causing movement of the latter to impart sufficient movement to the former to fly.

7. A glider and means for pushing the glider, and arms connecting the means with the glider for permitting the latter to soar above the supporting surface while still being pushed, said arms being long enough to permit the glider to swing entirely over the top of said propelling means and to come to rest in back of it.

8. An engineless glider, a device movable on a surface, arms connecting the device with the glider for pushing the glider, and manually controlled means for lifting the glider into the air when the glider attains sufficient speed, said arms being long enough to permit the glider to swing entirely over the top of said device and to come to rest in back of it.

9. An engineless seaplane, a boat, means carried by said boat for moving it through the water, arms connecting the boat with the seaplane, manually-controlled means for lifting the seaplane out of the water when it attains the desired speed, and means for steering the seaplane, said arms turning the boat in the same direction as the seaplane.

10. An engineless man-carrying glider, a wingless independent propelling unit movable on a supporting surface, connections between the glider and unit for moving the glider, manually-controlled means forming a part of the glider for lifting it into the air when attaining a sufficient speed, and means for steering the glider, said glider turning the unit in the same direction as that taken by the glider.

11. An aircraft propelling device comprising a power member and rigid arms permanently pivoted to the power member and to an aircraft at the center of gravity of the latter.

12. An aircraft propelling device comprising a power member, and rigid arms permanently pivoted to the power member and to an aircraft at the center of gravity of the latter adapted to aid in lifting and sustaining the aircraft while in flight.

13. A glider, a power member for moving the same, and arms pivotally secured to the power member and extending therefrom in an upwardly inclined direction and having their free ends pivotally secured to the aircraft at its center of gravity.

RUSSELL J. ROBERTSON.