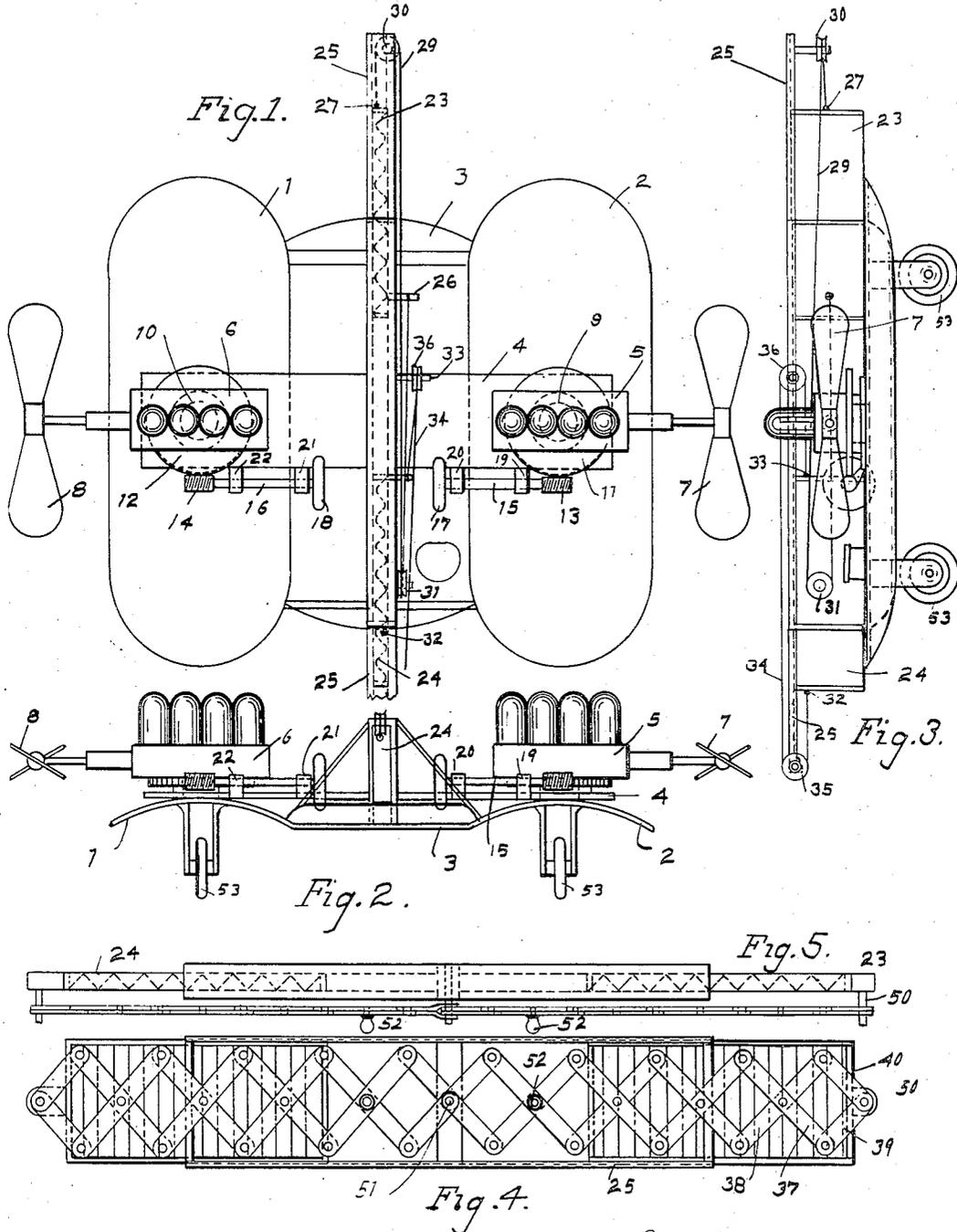


R. F. HOMMEL.
 AEROPLANE.
 APPLICATION FILED JUNE 12, 1912.

1,069,332.

Patented Aug. 5, 1913.



WITNESSES:
Emerit Schneider.
John Rieger

INVENTOR
Richard F. Hommel

UNITED STATES PATENT OFFICE.

RICHARD F. HOMMEL, OF SAN FRANCISCO, CALIFORNIA.

AEROPLANE.

1,069,332.

Specification of Letters Patent.

Patented Aug. 5, 1913.

Application filed June 12, 1912. Serial No. 703,300.

To all whom it may concern:

Be it known that I, RICHARD F. HOMMEL, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented a new and useful Improvement in Aeroplanes, of which the following is a specification.

My invention relates to improvements in the so called heavier than air flying machines.

The object of my invention is to provide means for adjusting the angle of the driving propeller, and an improved adjustable center-board and means for operating same. I attain these objects by the mechanism illustrated in the accompanying drawing, in which—

Figure 1 is a plan view of the aeroplane; Fig. 2 an end view; Fig. 3 a side view; and Fig. 4 a modified form of center-board control.

Similar numbers refer to similar parts throughout the several views.

1 and 2 are the planes.

3 is a frame for holding the planes together.

4 is a frame attached to the two planes, on which are mounted the two motors, 5 and 6, which drive the propellers, 7 and 8. The motors are mounted on pivots 9 and 10 in the frame 4, the motors being free to turn on the pivots, and controlled by the worm gears 11 and 12 and worms 13 and 14 mounted on the shafts, 15 and 16, on which are fastened the hand wheels 17 and 18, the shafts being mounted in bearings 19, 20, 21, and 22, which are attached to the frame 4.

23 and 24 are center-boards mounted to slide freely in grooves in the frame 25. The frames are made in the corrugated form shown. On the center-board 23 are pins 26 and 27, to which is fastened the rope 29 and which passes over the pulleys 30 and 31. The center-board 24 has pins 32 and 33 to which is fastened the rope 34, which passes over the pulleys 35 and 36. These ropes are used to operate the center-boards in the frame 25.

In the modified form of center-board con-

trol shown in Figs. 4 and 5 the centerboards are operated by a series of pivoted levers 37, 38, 39, and 40, which are attached to the center-board at pivot 50, and to the frame at pivot 51, and are operated by the handle 52. The object of this construction is to cause the center-board to travel a much greater distance than the handle that operates the same, and is attained by the multiplication of levers, as shown. It will be seen from this construction that as the motors are pivoted, that any angle can be given to the driving force, and as the motors are pivoted independently of each other, different angles can be given to each propeller. Thus the driving force can be changed to suit the direction in which the aeroplane is to be propelled. It will be seen that the center-board can be extended on each side equally, or farther out on one side than on the other. The object of this is to preserve a balancing means for straight ahead travel or for turning on a curve. All operating ropes and levers being within easy reach of one operator provides an easy and quick control of the aeroplane. The aeroplane is mounted on suitable truck-wheels for starting and traveling on land. It will be seen that a very efficient and operative aeroplane has been evolved.

I claim:

1. In an aeroplane the combination of two plane surfaces joined by a suitable framework; pivoted propeller driving motors, mounted on each plane; means for turning said motors; and an adjustable center-board mounted on said frame between the two planes, for the purpose set forth.

2. In an aeroplane the combination of two plane surfaces, a framework connecting said surfaces, motors pivotally mounted upon said planes, a worm gear carried by the base of each motor, the worm shaft meshing with said gear, a handle for facilitating the rotation of said worm shaft whereby said motor may be swung upon said plane, and an adjustable center-board mounted on said frame.

3. In an aeroplane the combination with a frame, a plane surface, a motor positioned

upon said plane surface, means engaging said motor for swinging the same relative to said plane surface, and an adjustable center-board mounted upon said frame.

5 4. In an aeroplane the combination with a frame, a plane surface, a center-board provided with adjustable ends, and toggle

means connecting said ends for adjusting the same upon said center-board.

RICHARD F. HOMMEL.

Witnesses:

JOHN H. MORGAN,
D. A. MORGAN.
