

F. HEIDBREDER.
AEROPLANE PROPELLING MECHANISM.
APPLICATION FILED JULY 3, 1914.

1,172,991.

Patented Feb. 22, 1916.

Fig. 1.

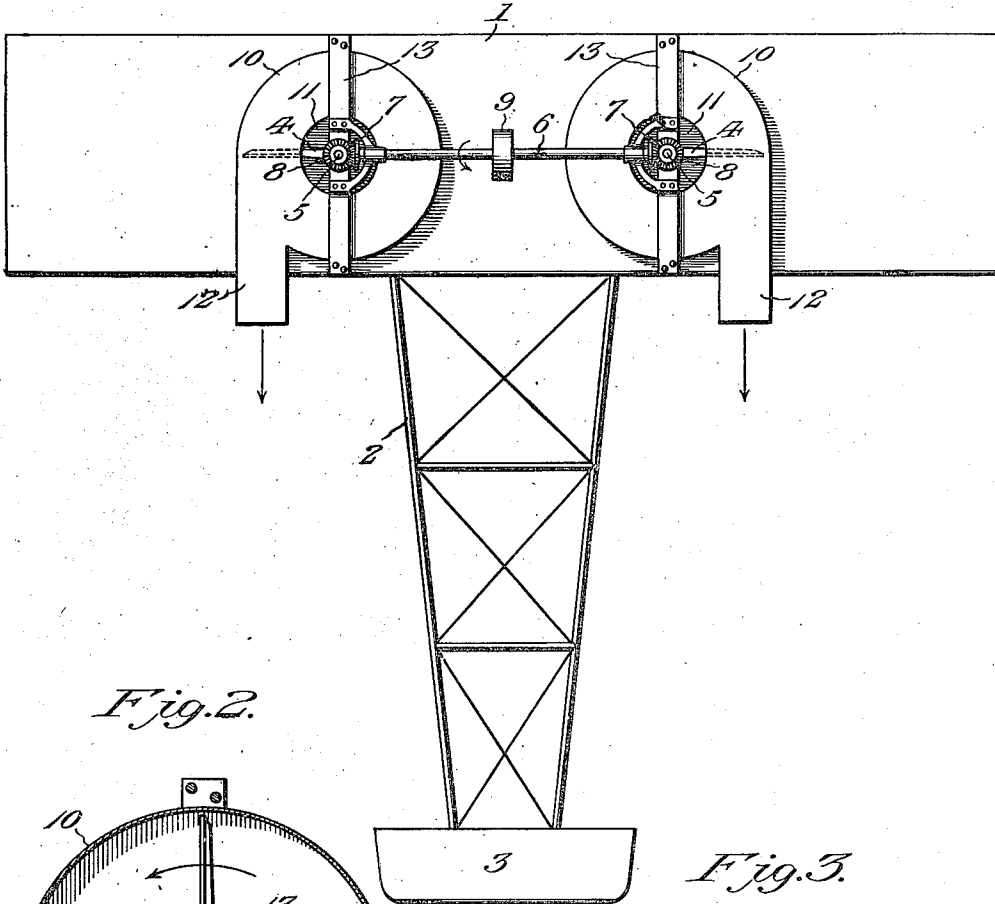


Fig. 2.

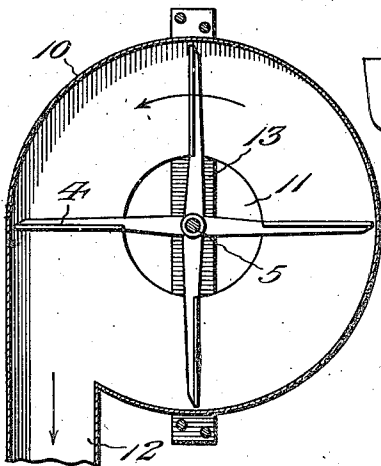
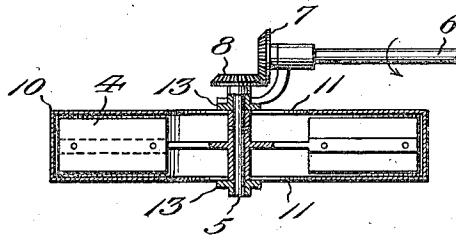


Fig. 3.



Witnesses

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FRED HEIDBREDER, OF QUINCY, ILLINOIS.

AEROPLANE-PROPELLING MECHANISM.

1,172,991.

Specification of Letters Patent.

Patented Feb. 22, 1916.

Application filed July 3, 1914. Serial No. 848,916.

To all whom it may concern:

Be it known that I, FRED HEIDBREDER, a citizen of the United States, residing at Quincy, in the county of Adams and State of Illinois, have invented new and useful Improvements in Aeroplane-Propelling Mechanism, of which the following is a specification.

This invention relates to propelling mechanism for aeroplanes, hydroplanes and the like while being also adapted for motor boats and land vehicles.

The broad object of the present invention is to produce a duplex propeller having a counterbalancing gyroscopic action, the two propelling members being rotated in opposition to each other and on axes perpendicular to the path of travel of the craft on which they are used. The said propellers thereby operating gyroscopically to balance an aeroplane, for example, resulting in what is known as automatic balance or equilibrium.

With the above and other objects in view, the invention consists in the novel construction, combination and arrangement of parts, as herein described, illustrated and claimed.

In the accompanying drawings:—Figure 1 is a plan view showing the propelling mechanism of this invention applied to an aeroplane. Fig. 2 is a horizontal section on an enlarged scale through one of the propellers. Fig. 3 is a diametrical vertical section through the same.

Referring to the drawings, 1 designates the supporting surface of an aeroplane, 2 the frame or fuselage and 3 the tail or horizontal rudder.

In carrying out the present invention, I provide propelling mechanism embodying two paddle propellers 4 arranged at opposite sides of the longitudinal center of the supporting surface as shown in Fig. 1 and carried by rotary shafts 5 which are substantially perpendicular to the supporting

surface 1 and to the general direction or path of movement of the craft.

The propellers 4 are driven simultaneously in opposite directions and at equal speed by means of a driving shaft 6 which is connected by gears 7 and 8 to the propeller shafts, the shaft 6 being preferably provided centrally of the machine with a wheel or pulley 9 to which power may be transmitted by any suitable motor by means of a chain or belt (not shown).

In connection with each of the propellers, I employ a substantially cylindrical casing 10 having a central air inlet opening 11 and a tangential discharge nozzle or spout 12. These casings are arranged reversely to each other as shown in Fig. 1 with the discharge nozzles 12 facing rearwardly. Therefore, equal drafts of air are forced rearwardly by the paddle propellers at points equidistant from the longitudinal center of the machine.

13 designates brackets or frames whereby the propeller casings are mounted on the machine frame, said members 13 also forming bearings for the propeller shafts 5.

What I claim is:—

The combination with a supporting surface, of twin rotary paddle propellers arranged at opposite sides of and equidistantly from the longitudinal center of said surface, said propellers being mounted to revolve on vertical axes, casings for said propellers having central inlet openings in their sides and tangential discharge nozzles facing rearwardly, and a driving shaft geared positively to the shafts of both of said propellers operating to simultaneously drive both propellers at the same speed in opposite directions.

In testimony whereof I affix my signature in presence of two witnesses.

FRED HEIDBREDER.

Witnesses:

HERMON HEIDBREDER,
WM. HEIDBREDER.