C. M. McMAHON.

AEROPLANE.

APPLICATION FILED APR. 13, 1912.

1,084,099.

Patented Jan. 13, 1914.

2 SHEETS—SHEET 1.

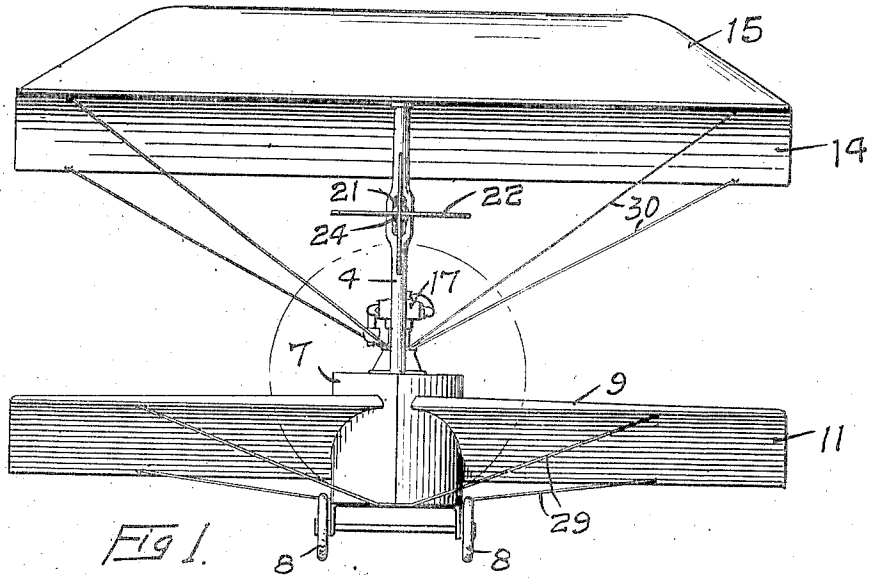


Fig 1.

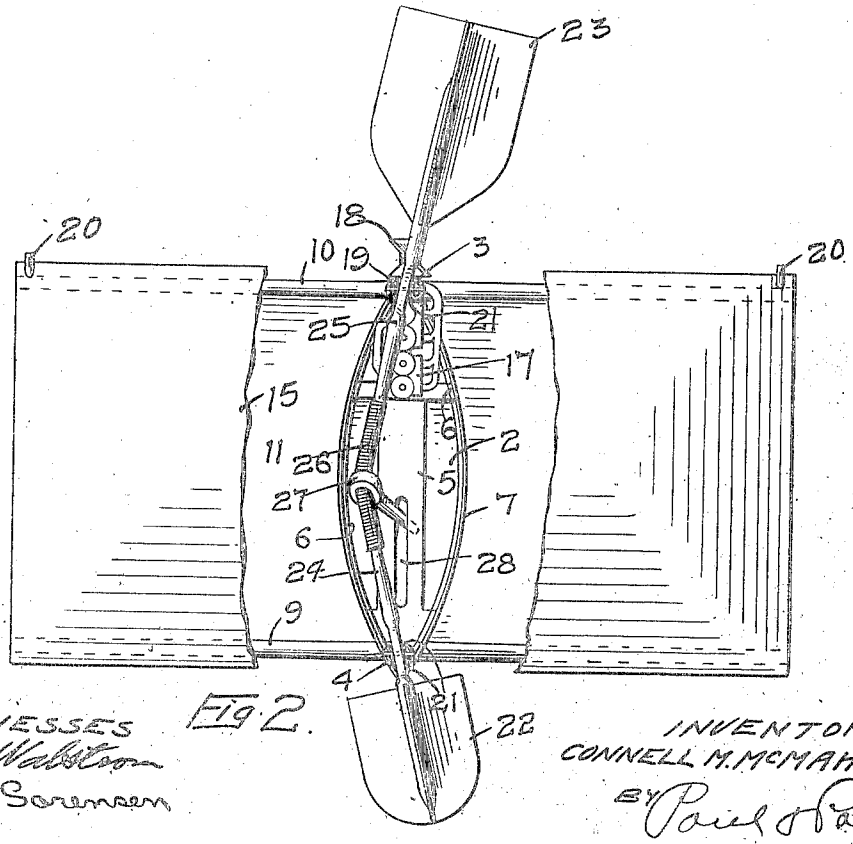


Fig 2.

WITNESSES

[illegible] Wabston

Q. E. Sorensen

INVENTOR

CONNELL M. McMAHON

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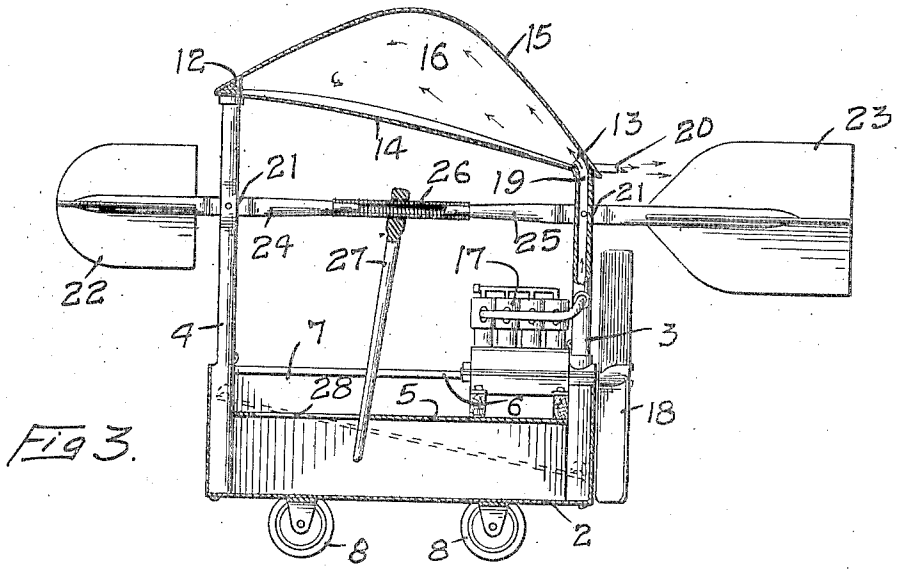


Fig 3.

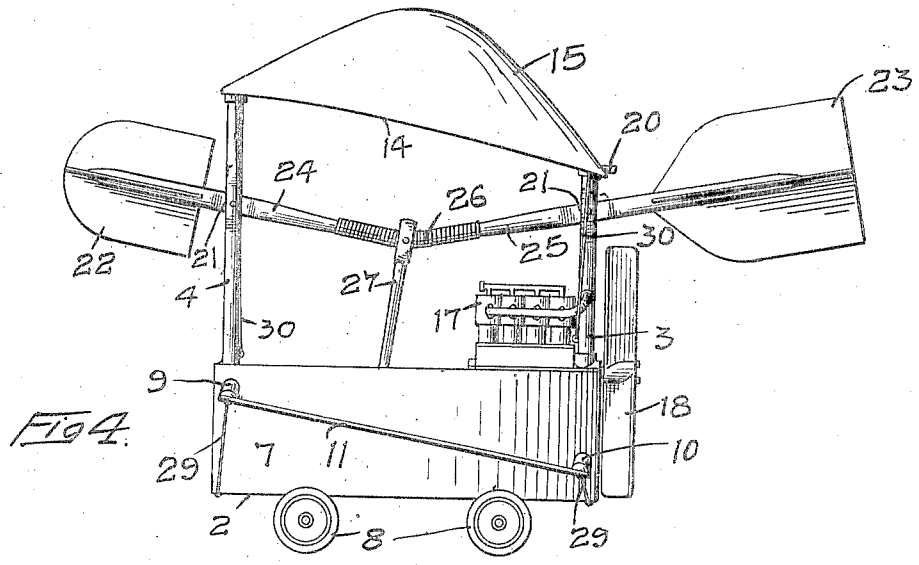


Fig 4.

WITNESSES
A. M. Washburn
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UNITED STATES PATENT OFFICE.

CONNELL M. McMAHON, OF MINNEAPOLIS, MINNESOTA.

AEROPLANE.

1,084,099. Specification of Letters Patent. Patented Jan. 13, 1914.

Application filed April 13, 1912. Serial No. 690,639.

To all whom it may concern:

Be it known that I, CONNELL M. McMAHON, a citizen of the United States, and resident of Minneapolis, Hennepin county, Minnesota, have invented certain new and useful Improvements in Aeroplanes, of which the following is a specification.

The object of this invention is to provide an aeroplane which can be easily controlled in the air without danger of being upset by a puff or sudden gust of wind.

A further object is to provide an aeroplane which can be easily steered or guided.

Other objects of the invention will appear from the following detailed description.

The invention consists generally in various constructions and combinations, all as hereinafter described and particularly pointed out in the claims.

In the accompanying drawings forming part of this specification, Figure 1 is a front elevation of an aeroplane embodying my invention, Fig. 2 is a plan view of the same, the top plane being broken away to illustrate more clearly the steering apparatus, Fig. 3 is a transverse vertical sectional view of the aeroplane, Fig. 4 is an end view, showing the steering lever drawn down to tilt the forward and rear rudders.

In the drawings, 2 represents a plate or board of varying length, according to the size of the aeroplane, tapered at the ends and of suitable width to form the bottom of the car. Posts 3 and 4 are provided at the ends of this board and project vertically therefrom. In an aeroplane of the type shown, the post 3 is preferably about seven feet in height and the post 4 about nine feet in height. Above the bottom board or floor of the car is a second board 5, of substantially the same length, but narrower and also tapered at the ends and framed into the posts 3 and 4 a suitable distance above the car floor, preferably about eighteen inches. Rails 6 are secured to the posts 3 and 4 and extend preferably about nine inches above the board 5. These rails are preferably about thirty inches apart from the bends at one end to the corresponding bends at the other end. A canvas covering 7 is preferably secured to the bottom of the car and to the rails and incloses the car. Suitable wheels 8 are mounted on the floor or bottom of the car, as shown in Fig. 3.

At each end of the car 1 provide rails 9 and 10, preferably about twenty-five feet long, the forward rail being framed at its middle portion to the post 4, preferably under the bent rails that form the sides of the car, while the rail 10 is framed at its middle portion to the rear post 3, preferably about three inches above the bottom of the car. These two bars have a flexible covering 11, such as canvas, forming a plane projecting laterally from each side of the car.

At the top of the posts 3 and 4 I provide bars 12 and 13, each having their middle portion framed to the top of the posts with suitable cross bars at the middle and the ends. A frame is thus formed, having a covering 14 of canvas or other suitable material, making the upper plane of the machine, and on the top of this upper plane I prefer to provide a hood 15 of canvas or other suitable material, forming a chamber 16 between it and the upper plane which, when filled with hot air or gas, will operate as a gas bag to hold the machine upright and resist a tilting or overturning tendency. This gas bag is preferably semi-oval in form, as indicated in Fig. 3.

A suitable source of power, such as a motor 17, is mounted preferably on the rear end of the car, with its shaft journaled in the post 3, and a propeller 18 is mounted on said shaft. The post 3 is preferably hollow, to form a passage 19 communicating with the exhaust of the engine and with the chamber 16, outlets 20 being provided in the chamber to allow circulation therethrough and permit the escape of the surplus exhaust. The posts 3 and 4 have transverse slots 21 therein, the walls on each side of the slot in the post 3 being hollow and communicating with the passage 19 to allow the flow of the exhaust into the chamber. Forward and rear rudders 22 and 23 have their spindles or stems 24 and 25 pivotally mounted in these slots and are adapted to tilt vertically or swing horizontally therein. The slots or mortises in the post preferably have rounded surfaces to allow for a considerable horizontal movement of the rudder stems, as plainly indicated in Fig. 2. The inner ends of the spindles 24 and 25 are in line substantially with one another normally, and have a flexible connection, such as a spiral spring 26. A lever 27 is loosely mounted on said spring and depends therefrom into a slot 28 in the board 5 which forms a seat extending lengthwise of the

car to allow the aviator to sit in the car in position to balance the aeroplane and manipulate the rudder operating lever 27. By grasping this lever, the driver of the car can tilt the rudders up or down or swing them laterally in much the same manner as a bird steers and controls his body by moving his head and tail up or down or to the right or left in flying through the air. The slightest pressure on the lever will tilt the rudders vertically or laterally and counteract the effect of the air currents, enabling the person in the car to steer the machine at will, while the gas chamber will positively prevent the machine from overturning or the rider from losing control of the car. The rudders, as shown, are located preferably above the ends of the car in which the rider is seated and may be made of any suitable size, as the weight and carrying capacity of the machine may demand. The gas chamber, instead of being filled with the exhaust from the engine, may be charged with any suitable gas, usually employed by aeronauts. The upper and lower planes are stiffened and braced by means of guy wires 29 and 30 connecting their outer portions with the frame of the car.

I do not wish to be confined to the dimensions of the parts specified herein, as in various ways these may be modified and still be within the scope of my invention. I may also omit the canvas covering for the car, using merely a skeleton frame, should this construction be preferred.

I claim as my invention:—

1. An aeroplane comprising a car, a lower plane composed of sections projecting outwardly from the car on opposite sides thereof and secured to the car, posts projecting upwardly from the forward and rear ends of the car, an upper plane mounted on said posts and having a gas chamber therein, said rear post being hollow, and an internal combustion engine mounted in the rear end of said car and having its exhaust connected with said hollow rear post.

2. An aeroplane comprising a car, a lower plane consisting of sections extending laterally on each side of said car and secured thereto, said sections being rearwardly and downwardly inclined from the forward portion of said car to the rear portion thereof, an upright post mounted at the forward end of said car, a second post mounted at the rear end of said car and shorter than said forward post, and an upper plane carried by said posts and of substantially the same length as said lower plane and inclined downwardly and rearwardly from said forward to said rear post and having a gas chamber formed therein, substantially as described.

3. An aeroplane comprising a car, a lower plane projecting outwardly from said car on opposite sides thereof, posts mounted in said car and projecting upwardly therefrom, an upper plane mounted on said posts and consisting of a lower fabric parallel substantially with said lower plane and an upper arched fabric forming, with said lower fabric, a gas chamber extending from end to end of said upper plane, and an internal combustion engine mounted in said car and having its exhaust connected through one of said posts with said gas chamber.

4. An aeroplane comprising a car, a lower plane composed of sections projecting outwardly from the car on opposite sides, posts mounted on the forward and rear portions of said car, an upper plane carried by said posts and parallel substantially with the sections of said lower plane, said upper plane consisting of parallel rails centrally mounted on the upper ends of said posts and extending outwardly therefrom parallel with said lower plane, a fabric stretched between said rails and secured thereto and forming the bottom of the upper plane, an upper fabric also secured to said rails and arched over said lower fabric forming therewith a gas chamber, the rear post being shorter than the forward one whereby said gas chamber will be rearwardly and downwardly inclined, a gas engine mounted in said car near said rear post and having a propeller and a steering rigging mounted on said forward and rear posts between said car and said upper plane.

5. An aeroplane comprising a car, oval substantially in longitudinal section, the lower plane composed of sections extending outwardly from each side of said car, and downwardly and rearwardly inclined, posts mounted in the forward and rear ends of said car, the rear post being shorter than the forward one, an upper plane centrally mounted on said posts and also downwardly and rearwardly inclined, the bottom of said upper plane being parallel substantially with said lower plane, a gas engine mounted in said car adjacent to said rear post and having a propeller and a steering rigging mounted on said post between said car and said upper plane.

In witness whereof, I have hereunto set my hand this 9th day of April, 1912.

CONNELL M. McMAHON.

Witnesses:
GENEVIEVE E. SORENSEN,
EDWARD O. PAUL.