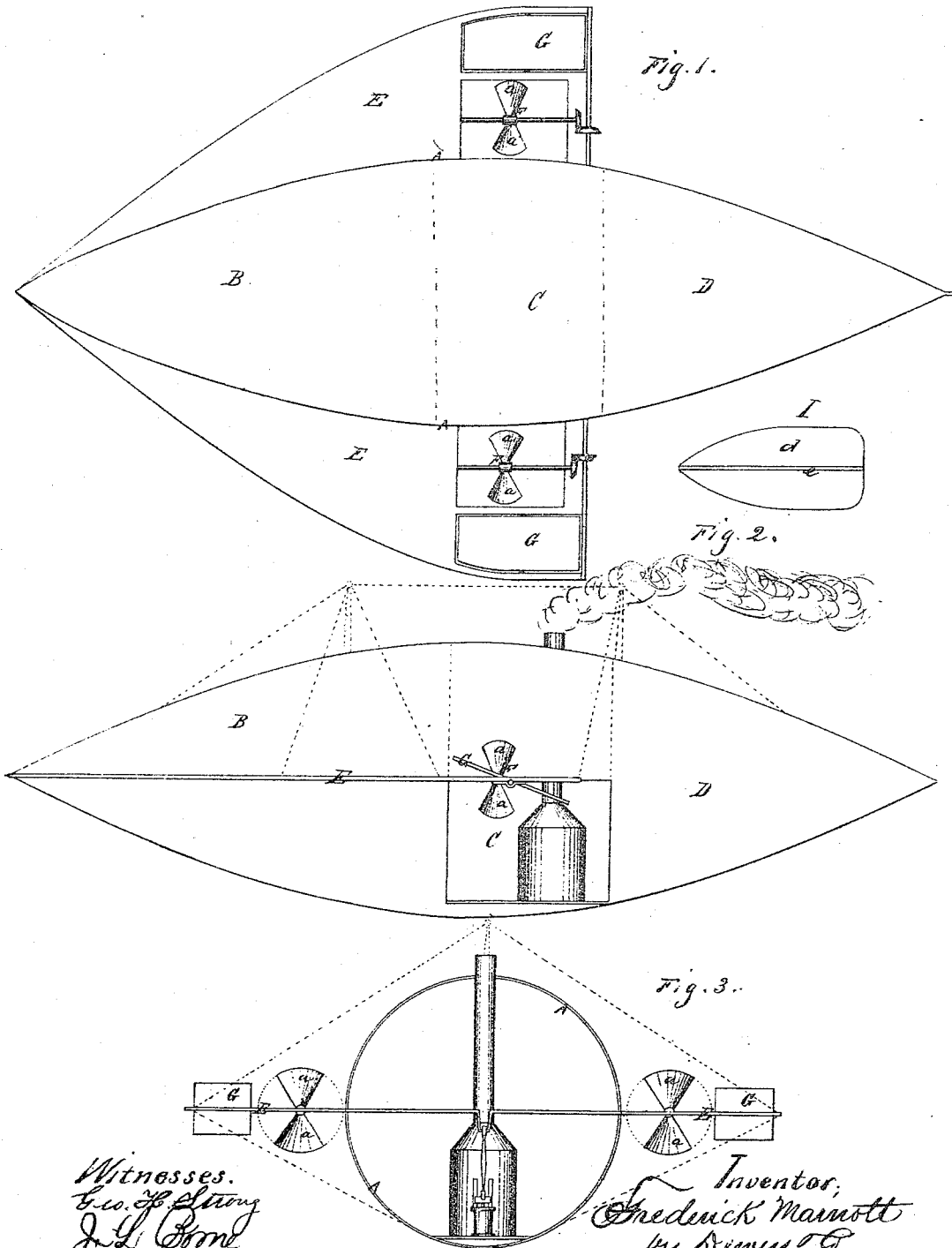


F. Marriott,
Aerial Steam Car.

No. 97,100.

Patented Nov. 23. 1869.



Witnesses.
E. W. H. Strong
J. L. Stone

Inventor,
Frederick Marriott
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United States Patent Office.

FREDERICK MARRIOTT, OF SAN FRANCISCO, CALIFORNIA.

Letters Patent No. 97,100, dated November 23, 1869.

IMPROVEMENT IN AERIAL STEAM-CARS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, FREDERICK MARRIOTT, of the city and county of San Francisco, State of California, have invented an Aerial Steam-Carriage; and I do hereby declare the following description and accompanying drawings are sufficient to enable any person skilled in the art or science to which it most nearly appertains, to make and use my said invention or improvements without further invention or experiment.

My invention relates to a steam-carriage or vessel, which is so constructed that it can be moved or propelled through the air by mechanical means, and which can be steered in its course with the same facility that a vessel floating upon the surface of a body of water obeys the movements of her rudder.

My vessel or carriage is constructed of any light and strong material, and is made pointed at both ends, or cigar-shaped, each end being inflated with hydrogen or other gas.

Extending from the forward point of the carriage to about the middle of the vessel, and on each side, is a vane or wing, which gradually widens as it extends toward the rear.

These wings serve to carry the carriage steadily through the air.

The carriage is caused to move through the air by screw or other propellers, which are driven by a steam or other power-engine of suitable size and capacity.

In the rear end of each of the vanes or wings, at the sides of the vessel, is attached a plane, which turns upon an axle, and by which any desired elevation can be given to the vessel.

A tail or rudder is also attached to the rear pointed end, by means of which, any required direction can be given to the vessel when it is in motion.

In order to more fully illustrate and describe my invention, reference is had to the accompanying drawings, forming a part of this specification.

Figure 1 is a top view of my aerial carriage or machine.

Figure 2 is an elevation of one side.

Figure 3 is a transverse vertical section through the centre.

A represents a frame or structure, in the form of two cones united at their bases, and made of some light and strong material.

This structure is divided into three compartments, B, C, and D, the compartment C being in the middle of the vessel, inside of which the engine is carried.

The compartments or gasometers B and D are covered with some suitable fabric, for containing hydrogen, or other gas specifically lighter than atmospheric air, with which the compartments are to be filled, for which purpose any of the prepared fabrics capable of retaining gas, such as is employed in the manufacture of balloons, will answer.

Beginning at the point of the vessel, and extending about half way its length toward the rear, are wings or planes E E, one on each side.

These wings are rigidly fixed to the side of the car, so as to lie horizontally in a plane with its centre, and gradually increase in width toward the rear.

These wings aid in buoying up the car, and keeping it steady in its movements through the air.

Opposite the centre of the vessel, and operating in suitable openings in the rear end of the wings E E, are propellers F F.

These propellers consist of two blades, *a a*, bent to the proper curvature, and driven by an engine of the proper capacity, carried in the apartment C.

The kind of power or style of engine employed is immaterial, the only requisite being that it shall be as light as possible, and, when steam is used, that the boiler shall have a sufficient amount of fire-surface to enable the generation of steam to be carried on as fast as possible.

The propellers F, working, as they do, outside of the body of the car, and through the horizontal wings, have full grasp upon the air, to carry forward the car.

Turning upon an axle, through openings in the wings, outside of the propellers, are what I call "planes," designated by the letters G.

These planes vibrate upon axles placed transversely to the longitudinal axis of the car, and are operated, by suitable mechanism, from the interior of the compartment C, by the engineer.

By turning these planes to the proper angles, the elevation of the car can be regulated.

This is one of the principal features of the invention, as, by their use, the vessel can, at all times, be controlled, and its elevation regulated, with the same ease that a bird gives itself an upward or downward direction with its wings.

The tail or rudder I is composed of two parts, *d* and *e*, placed at right angles to each other, their planes intersecting through the middle of each, thus forming a vertical and a horizontal rudder.

This tail or rudder is attached to the rear end of the cigar-shaped frame A, by means of a hinge or other joint, so that it can be turned to stand at any desired angle to the frame, either up or down, and thus give the engineer a more complete control over the movements of the vessel.

The entire machinery is operated from the central compartment or cabin C by suitable mechanism.

This flying boat or vessel, I call "The Avitor," its governing principle and general arrangement being similar to that of a bird moving through the air.

The Avitor, when fully inflated, does not contain sufficient gas to cause it to rise, but remains in its position until the propellers are started into operation, and begin to beat the atmosphere, when it rises with

the greatest ease, being driven forward, at the same time, through the air.

What I claim as my invention and improvement in aerial or flying-machines, is—

1. A spindle, having conical ends B and D, and a space, C, in the middle, between the conical ends, for the motive-power, attendants, passengers, and freight.

2. The rigid or stationary wings or planes E, arranged upon the sides of the spindle of an aerial or flying machine, for the purpose set forth, substantially as described.

3. And, in combination with the rigid or stationary wings or planes E, on the sides of a flying machine, the adjustable plane G, arranged to operate substantially as described.

4. In combination with a flying machine, a four-vaned rudder or tail, I, arranged to vibrate in either direction, substantially as described, for the purpose of steering the machine.

5. And, in combination with the four-vaned rudder or tail I, the adjustable planes G, arranged to cooperate with the rudder, when required to steer the machine.

In witness whereof, I have hereunto set my hand and seal.

FREDERICK MARRIOTT. [L. S.]

Witnesses:

A. SMITH,
GEO. H. STRONG.